

Record of Decision

Knik Arm Crossing Project

Federal Project No: ACSTP-0001(277)
AKSAS Project No: 56047

I. Decision

This Record of Decision (ROD) for the Knik Arm Crossing (KAC) project was developed in accordance with 40 Code of Federal Regulations (C.F.R.) § 1505.2 and 23 C.F.R. § 771.127. The Knik Arm Bridge and Toll Authority (KABATA) has worked jointly with the Federal Highway Administration (FHWA) in the development and evaluation of this project. The project will construct a new bridge crossing of Knik Arm, including adequate connections to the committed roadway networks on both sides of the arm. The purpose of the project is to further development of transportation systems in the upper Cook Inlet region by providing improved vehicular access and surface transportation connectivity between Anchorage and the Matanuska-Susitna Borough (Mat-Su) through the Port MacKenzie District, with a financially feasible and efficient crossing to meet the needs for:

1. Improved regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in Alaska Statutes (AS) § 19.75
2. Regional transportation connectivity for the movement of people and the movement of freight and goods to, from, and between Anchorage, the Mat-Su, and Interior Alaska
3. Safety and transportation system redundancy for alternative travel routing and access among regional airports; ports; hospitals; and fire, police, and disaster relief services for emergency response and evacuation

The Selected Alternative for the KAC project is the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, cut-and-cover tunnel under Erickson Street).

In compliance with the National Environmental Policy Act (NEPA) of 1969 (as amended), 40 C.F.R. Parts 1500–1508, and FHWA regulations (23 C.F.R. Parts 771, 772, and 777), a *Knik Arm Crossing Draft EIS/Draft Section 4(f) Evaluation* was approved on September 5, 2006. The minimum 45-day comment period required by the Council on Environmental Quality (CEQ) began on September 15, 2006, and was extended from October 30, 2006, to November 17, 2006, based on requests received from agencies and the public. This extension resulted in a total comment period of 63 days. Two public hearing and open house events, one each in Anchorage (October 16, 2006) and the Mat-Su (October 18, 2006) were held by FHWA and KABATA.

The principal areas of concern based on comments received on the *Draft EIS/Draft Section 4(f) Evaluation* generally focused on the following eight issues (see Chapter 8 of the *Final Environmental Impact Statement [Final EIS]* for more detail):

- Alternatives analysis
- Beluga whale impacts
- Bridge length
- Funding and cost

- Government Hill and Downtown Anchorage impacts
- Hydrology and sedimentation in Knik Arm
- Indirect and cumulative impacts in the Mat-Su
- Transportation connections and logical termini

All of these concerns were evaluated in the *Final EIS*, where all alternatives under consideration (including the No-Action Alternative) were developed to a comparable level of detail in the *Final EIS*, and their comparative merits were evaluated. A *Final EIS/Final Section 4(f) Evaluation* that addressed all comments received on the *Draft EIS/Draft Section 4(f) Evaluation* was approved on December 20, 2007. The Notice of Availability for the *Final EIS and Final Section 4(f) Evaluation* was published in the *Federal Register* on January 18, 2008. The *Final EIS* identified the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, cut-and-cover tunnel under Erickson Street) as the Recommended Alternative and was distributed to federal and State agencies, local governments, tribes, and the public. Appendix A of this ROD includes substantive comments received on the *Final EIS* and responses to the comments.

The principal areas of concern raised by comments received on the *Final EIS/Final Section 4(f) Evaluation* generally focused on the following six issues:

- Alternatives analysis
- Beluga whale impacts
- Archaeology and historic preservation
- Funding and cost
- Government Hill and Downtown Anchorage impacts
- Indirect and cumulative impacts in the Mat-Su

All of the impacts identified in the *Final EIS* were weighed against the KAC project's benefits, particularly those related to meeting the purpose and need of improved regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans; improved regional transportation connectivity for the movement of people and the movement of freight and goods between the Mat-Su, Anchorage, and Interior Alaska; and improved safety and transportation system redundancy. In addition to the ability to meet the project's purpose and need criteria, as stated in the *Final EIS*, reasonable alternatives were evaluated for their direct, indirect, and cumulative impacts on the environment (social, economic, cultural and recreational, historic, physical, and natural). The reasonable alternatives and their impacts were also weighed and balanced in consideration of their ability to provide safe and efficient transportation and the benefits of the proposed action. Based on that analysis and in consideration of comments received on the *Final EIS* and addressed in Appendix A, FHWA has identified the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, cut-and-cover tunnel under Erickson Street) as the Selected Alternative for design and construction. The basis for this decision is detailed in Section II.

The KAC project will be constructed in phases to provide needed capacity as traffic volumes grow. The phases include an initial minimum two-lane Northern Access, Crossing (8,200-foot bridge structure and connecting roadway sections on gravel fill), and a connection via Erickson Street to Loop Road/A-C Couplet in Phase 1. By 2030, traffic modeling indicates the likely need to expand the bridge crossing and Mat-Su and Anchorage Approach alternatives to four lanes and to connect to the Ingra-Gambell Couplet with a viaduct across the Ship Creek rail yard in Phase 2.

The timing of elements described in Phase 2 is based on traffic modeling and economic information. Traffic studies show that the A-C Couplet has capacity for additional traffic for approximately 11 to 12 years. When travel demand increases to the point that additional capacity is needed, Phase 2 will be constructed. If travel demand grows faster than anticipated, elements described for Phase 2 could be constructed earlier. Conversely, if traffic demand grows slower than anticipated, Phase 2 will be further delayed. Moreover, based on constructability or project economics, certain elements from Phase 2 (e.g., initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1.

All designs and engineering features referred to in the EIS are “typical,” meaning that only a preliminary 30 percent indicative design of the roadways, bridge, and structures has been completed to date and solely for the purpose of the environmental impact analyses. Final design will be subject to all applicable laws and regulations, design requirements and construction specifications, committed mitigation measures, and agreed to construction measures necessary for the protection of the beluga whale (*Delphinapterus leucas*) and its critical habitat. The 8,200-foot bridge is considered to be the minimum length that will be required.

II. Basis for the Decision

The decision made for the Selected Alternative was based directly on economic and technical/engineering considerations and impacts while meeting the project’s purpose and need. The three needs identified for the KAC project are improved regional transportation infrastructure, improved regional connectivity, and improved safety and transportation system redundancy. Additional need factors serving as the basis for the decision were financial feasibility and efficient traffic operation. Also clarifying the decision process were the ability to meet local and regional planning objectives, responsiveness to public and agency issues and concerns, least overall harm to Section 4(f) properties, and least impacts on beluga whales and Government Hill. Each of these considerations; benefits; and avoided, minimized, or mitigated adverse impacts is discussed below and in Section VI., EIS Measures to Minimize Harm.

Identified Project Needs

Need for improved regional transportation infrastructure: Providing infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans is an important element of this project. The total regional population base in Anchorage and the Mat-Su is projected to grow from approximately 350,000 at present to approximately 550,000 by 2030. The only way to accommodate the anticipated 31,600 additional households is to have higher residential densities, infill housing or redevelopment, and the development of town centers. The Anchorage Bowl will not be able to meet expected demand for

urban and rural single-family homes. Thus, the outflow of new single-family home construction to the Chugiak-Eagle River Area and the Mat-Su will continue to increase.

The Northern Access-Erickson Alternative will provide increased access to developable land in the Mat-Su that could support new houses and is within commuting distance of Anchorage, Wasilla, and Palmer. With the bridge and connecting roadways in place, the southwestern portion of the Mat-Su will become an attractive location for commercial and affordable housing development to support projected population growth in the region. This is consistent with local planning documents.

The No-Action Alternative does not provide a second, major corridor for north-south access in the region. The No-Action Alternative does not increase access to developable land needed for homes for expected population growth and to support existing and future economic development. As such, it does not meet the purpose and need of the project, but serves as an environmental baseline. The No-Action Alternative continues existing growth patterns that would continue to add traffic on the Glenn Highway Corridor.

Need for improved regional connectivity: Improved regional connectivity for moving people, freight, and goods is an important need to be met by this project. Under the Northern Access – Erickson Alternative, the bridge crossing and connecting roads will provide a second high-capacity transportation connection between Anchorage, the Mat-Su, and Interior Alaska. The Northern Access – Erickson Alternative will provide improved access for passenger vehicles and freight haulers. Linking the Port MacKenzie District directly to the road, rail, marine, and air transportation hub in the Anchorage Bowl will improve now-limited intermodal connections to the rest of the state, as well as to international destinations. Container loads from Anchorage destined for transshipment north to the Mat-Su and to Interior Alaska could be deployed by truck through the Port MacKenzie District rather than over the longer, existing route through Downtown Anchorage and the Glenn Highway. A road linking Anchorage directly to Port MacKenzie will support the growth of Alaska’s economy while meeting the transportation needs of the state, Anchorage, and the Mat-Su.

Under the No-Action Alternative, the Cook Inlet Ferry system is designed to satisfy relatively low-volume travel demand, rather than long-term, high-volume travel demand. The ferry system is an initial step to improved access, but is not designed to carry high-volume passenger vehicle loads, heavy trucks, and industrial traffic. Under the No-Action Alternative, the movement of people, freight, and goods between Anchorage, the Mat-Su, and Interior Alaska on an efficient and regional capacity basis is only marginally improved and, accordingly, does not meet the project’s purpose and need.

Need for improved safety and transportation system redundancy: Providing system redundancy to improve safety is an important need to be met by this project. The only north-south route between Anchorage, the Mat-Su, and Interior Alaska is the Glenn Highway Corridor. If a natural disaster were to interrupt this corridor, neither Anchorage nor the Mat-Su would have an alternate route for evacuation or emergency responders.

The Northern Access – Erickson Alternative will provide Alaska’s most populous region with a redundant route for improved safety, alternative travel routing, disaster preparedness, evacuation, and emergency response, and will provide a needed alternative connection among the region’s airports, ports, and hospitals.

While the entire region is subject to natural disasters, such as earthquakes, volcanic eruptions, wildfires, and severe weather, their impacts are not necessarily experienced regionally. Depending on location, a catastrophic natural event or single incident along the Glenn Highway could halt traffic for long periods of time without affecting the area of the KAC. Even now, relatively minor automobile accidents on the Glenn Highway cause extended delays and loss of service. On the Glenn Highway, between the traffic signal at Bragaw Street in Anchorage and the Palmer-Wasilla Interchange in the Mat-Su, for the 7-year period from 2002 to 2008, there were 2,631 auto accidents, causing 19 fatalities, 161 major injuries, and 779 minor injuries. This averages one accident per day, resulting in a minor injury once every 3.3 days, and a death or major injury every 2.02 weeks. These accidents frequently caused lane closures, temporary highway closures, congestion, and significant traffic delays. Redundant access will help to relieve this problem by providing an alternative travel route between Anchorage and the Mat-Su and will support a more reliable emergency response system in the region.

Although the No-Action Alternative would provide a ferry that would act as an alternative route, the ferry would not be able to support high travel volumes, large-scale movements of people and freight, or timely access for emergency responders in the event of a natural disaster.

Financial feasibility: Financial feasibility was an important consideration in the development of reasonable alternatives for the project. Section III, Alternatives, discusses how financial feasibility was used to screen alternatives.

Financial feasibility was not a distinguishing factor in identifying the Selected Alternative because all of the reasonable alternatives identified in the *Final EIS* were financially feasible.

Following approval of the *Final EIS*, FHWA conducted a review of the cost estimate in 2009 (*Knik Arm Crossing Cost Estimate Review*, FHWA, 2009) to ensure reasonable cost and financial feasibility to meet the purpose and need. KABATA continues to refine cost estimates to account for additional information and changing economic conditions. In January 2010, KABATA fine-tuned costs to account for design modifications to minimize and mitigate construction impacts that could affect the beluga whale. The latest traffic and revenue forecasts continue to show that the project is financially feasible.

Efficient traffic operation: FHWA selected the Northern Access Alternative over the Point MacKenzie Road Alternative in the Mat-Su because it will prevent local and through-traffic from conflicting with industrial traffic in the principal operating zone of the Port MacKenzie District and it supports current and future Port MacKenzie development and operation plans. The Crossing will lower the cost of moving freight to interior Alaska because it will connect the Port of Anchorage (POA) and Port MacKenzie and allow freight to cross Knik Arm without going across the A-C couplet and into Downtown Anchorage.

In Anchorage, the Erickson Alternative was selected over the Degan Alternative because the Erickson Alternative allows for a more direct, free-flow of traffic and avoids the use of local streets in Government Hill (except for local access), thus minimizing impacts on the Government Hill Community. Unlike the Degan Alternative, the Erickson Alternative requires no signalized intersection and the north and south ramps give Government Hill residents easy access to Downtown Anchorage and the Mat-Su. Additional discussion of the relative merits of these two alternatives is in Section III. D. and in Chapter 2 of the *Final EIS*.

Key Decisional Factors

Planning objectives: FHWA selected the Northern Access Alternative in the Mat-Su because this alternative is more consistent with Mat-Su Borough and Port MacKenzie planning objectives, has fewer wetland impacts, will be more conducive to Port MacKenzie development, and is favored by Mat-Su Borough and Port MacKenzie officials. Right-of-way (ROW) impacts and construction costs are similar under both the Point MacKenzie Road Alternative and Northern Access Alternative.

Public involvement: Public involvement played a key factor throughout development of the EIS. While formal Scoping activities were conducted over a 9-month period in 2004 and 2005, public involvement has been continuous up to the present day. For example, after the end of the formal Scoping process, a neighborhood group suggested an alternative that was later developed and evaluated (see Section III. D. Elm Street Variant). Under formal Scoping, nearly 100 meetings were held to discuss the development of the range of alternatives and the screening of the alternatives to identify reasonable alternatives for further study. More than 1,000 comments were received. A wide variety of outreach tools were used in the development of purpose and need and in developing and screening the range of alternatives. This extensive Scoping process was established to allow the proposed project plans and designs to be influenced by and evolve as a result of input from the public, local governments, agencies, military, and tribes.

After issuing the *Draft EIS*, KABATA and FHWA held public hearings to receive comments on the EIS. Written responses were developed for all comments received—oral and written—regarding the *Draft EIS*. These comments and responses were included in the *Final EIS*. Written responses were also developed for all comments received regarding the *Final EIS*. These comments and responses are included as part of this ROD.

Public involvement also included key informant interviews and input and review of study data from local experts, who formed an Economic Working Group (EWG). FHWA and KABATA conducted over 50 key informant interviews with individuals knowledgeable about the region's economy and likely future developments.

In addition, an Interdisciplinary Team (IDT) was established specifically for local governmental officials and environmental resource and regulatory agencies. Many IDT meetings were held and were open to representatives of agencies, local governments, and the military having either a direct interest in or applicable jurisdiction over some aspect of the proposed project. Development of criteria for screening alternatives was shared in these meetings, and general concurrence from participating agencies is documented in the Administrative Record.

A list of Scoping components highlighting the extensiveness of the scoping process can be found in *Scoping Summary Report: Comments, Issues, and Alternatives*, (FHWA, 2005).

As stated at the beginning of this section, the Selected Alternative decision was based not only on regional benefits the KAC project will provide, but also on avoidance, minimization, and mitigation of impacts associated with its implementation and operation, as summarized in the following three topics that involved key considerations for the basis for decision.

Least overall harm to Section 4(f) properties: The Erickson Alternative was selected over the Degan Alternative because it causes the least overall harm to Section 4(f) properties as required by 23 C.F.R. § 774.3(c). Section IV of this ROD, *Section 4(f)*, presents the economic and technical/engineering considerations, benefits, and minimized adverse impacts that are part of the basis of the decision, including historic properties, recreational properties, the alternative with the least overall harm, and Section 4(f) mitigation and commitments.

Beluga whales: The 8,200-foot bridge is the Selected Crossing Alternative. The 14,000-foot bridge length was found to not be financially feasible and did not meet stated purpose and need criteria. This alternative was carried forward solely for comparative evaluation based on requests from environmental resource and permitting agencies. The 8,200-foot bridge will need approximately half the number of piers as the 14,000-foot bridge, resulting in shorter in-water construction time and less construction noise. Shorter construction time and less noise mean less potential to disrupt beluga whale behavior and movement patterns. NMFS issued a Biological Opinion for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 based on the 8,200-foot bridge alternative which states: “NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat”. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, *Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)*, and Z, *Mitigation Measures for Impacts on Threatened or Endangered Species*, below as well as the NMFS BO located in Appendix C, *Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale*.

Minimized impacts on Government Hill neighborhood: The Erickson Alternative was selected over the Degan Alternative because the Erickson Alternative minimizes impacts on the Government Hill neighborhood. Section III of this ROD, *Alternatives Considered*, discusses the economic and technical/engineering differences between the alternatives. Section IV of this ROD, *Section 4(f)*, presents the benefits and minimized adverse impacts regarding historic properties, recreational properties, and Section 4(f) properties within Government Hill, and mitigation and commitments to address impacts on these properties that are part of the basis of the decision. The Erickson Alternative has fewer impacts on parks and fewer relocation requirements. In addition, the Erickson Alternative includes a cut-and-cover tunnel that will place all through-traffic below the grade of the neighborhood, thus minimizing neighborhood and community cohesion impacts on the Government Hill Community. More detail regarding efforts to minimize impacts on the Government Hill neighborhood is in Sections IV and VI. B, D, G, M, N, and O.

III. The Alternatives Considered

The Knik Arm Crossing EIS evaluated ways to provide improved vehicular access and surface transportation connectivity between Anchorage and the Mat-Su through a financially feasible and efficient crossing of Knik Arm.

As required by NEPA, a full range of alternatives to address the purpose and need criteria for the KAC project were identified and evaluated. The project's purpose and need statement was defined broadly enough to allow consideration of roadway, nonroadway, and multimodal alternatives, including nonbridge alternatives such as ferry, tunnel, and rail. During the formal Scoping process, the alternatives were screened against nine purpose and need criteria and eight technical criteria to identify reasonable alternatives for detailed analysis in the *Draft EIS*. The Council on Environmental Quality (CEQ) defines reasonable alternatives as those "that are practical or feasible from the technical and economic standpoint and those using common sense" (CEQ 1986). One of the screening criteria included financial feasibility not-to-exceed \$600 million for initial (Phase 1) construction cost of the project. No alternatives were, however, dismissed based solely on costs. It should be noted that because of the evolving process of alternatives development, early construction cost estimates prepared as part of the Scoping process are not readily comparable to later-phase comprehensive cost evaluations. FHWA conducted a review of the cost estimates in 2009 (*Knik Arm Crossing Cost Estimate Review*, FHWA 2009) and determined that with the latest traffic and revenue forecasts, the Selected Alternative is financially feasible.

In Level 1 Screening conducted during Scoping, five different transportation modes were evaluated. During the Scoping period, FHWA received a letter signed by seven nongovernmental organizations (NGOs) requesting that a four-part transportation package consisting of multimodal alternatives be evaluated. The intent of the transportation package was to maximize existing transportation infrastructure and capitalize on future planned modal efforts already underway in lieu of constructing a bridge crossing Knik Arm. Through consultation with the NGOs, a series of transportation improvements were developed and generous assumptions were used to create alternatives that could be fairly evaluated. The multimodal transportation package combined ferries, commuter rail, carpools/van pools, and express buses along the Glenn Highway.

The ferry alternative did not meet the purpose and need requirement that it be sustainable, because annual revenue from fares was not expected to cover the annual costs for operation and maintenance for either the ferry or commuter rail portions of the multimodal system. Combining several alternative modes of transportation, each of which would require annual government operating subsidies, was determined to result in a system that would not be sustainable.

Although the Multimodal Transportation Package could fulfill numerous needs in upper Cook Inlet, it did not meet the requirement for efficiency because of the cumulative travel times associated with loading and offloading, transit times, and connections. The Multimodal Transportation Package did not meet projected capacity needs; it was expected to serve only 12,000 vehicles per day by 2030, as opposed to an expected 45,870 vehicles per day with a road crossing.

Neither ferries nor commuter rail would provide efficient emergency access or transportation system redundancy because of limitations in capacity and time required for loading and unloading passengers.

Based on the screening criteria, the transportation package did not meet the purpose and need for the KAC project. It was therefore, considered not to be a reasonable alternative and was eliminated from further consideration. Only a roadway mode was determined to be able to meet the purpose and need criteria, and roadway alternatives were thus evaluated in Level 2 Screening. Only roadway alternatives would provide the 24-hour per day, 7-days per week connectivity across Knik Arm needed by the public.

A roadway alternative would link Anchorage and Port MacKenzie District using one of two primary roadway structures to cross Knik Arm: a tunnel or a bridge. Either a bridge or tunnel roadway crossing would provide an alternative to the Glenn Highway as the principal north-south arterial transportation component of the National Highway System (NHS) in upper Cook Inlet. Any of the roadway options would directly connect Anchorage and the Port MacKenzie District; accommodate passenger cars, buses, and trucks, thereby moving both freight and passengers; and serve as an alternate evacuation and response route during emergencies, providing safety and transportation system redundancy. Bridges, tunnels, and tidal power dams were evaluated as possible roadway crossing methods of Knik Arm.

In Level 2 Screening, three types of bridges, two types of tunnels, and a tidal dam were evaluated. For a variety of technical and financial feasibility reasons, floating bridges and suspension or cable-stayed bridges failed to meet the purpose and need criteria and were not further considered. A medium-span, pile-supported bridge is generally considered the most cost-effective structure for water crossings where site conditions are conducive to its use. Pile-supported concrete or steel bridges are considered to be the most cost-effective structures for water crossings where site conditions are conducive to their use, such as Knik Arm. They are technically practical because they are not subject to tidal and ice problems associated with other bridges; allow passage underneath of small- to medium-sized vessels, and thereby do not interfere with reasonable needs of navigation; and do not interfere with airspace and telecommunications. Based on the screening criteria, a concrete or steel pile-supported bridge met all screening criteria and was considered a reasonable alternative. It was carried forward for further study.

Immersed tube tunnels and bored tunnels were evaluated against the purpose and need criteria. Either would require a ventilation system that would potentially need shafts extending above the water surface at several locations along the length of the crossing. Because construction costs associated with a tunnel crossing were estimated to be approximately \$300 million higher than the most expensive bridge alternative reviewed in previous engineering studies, this alternative did not meet the purpose and need criteria of financial feasibility. Annual toll revenues were not expected to cover the annual costs to operate and maintain a tunnel crossing; therefore a tunnel alternative did not meet the criteria of sustainability. A tunnel crossing would meet several of the technical criteria, such as compliance with airspace restrictions and operations, meeting the reasonable needs of navigation, having minimal effect on military missions or operations related to electromagnetic compatibility from potential shielding effects, and having minimal effects on beluga whale and essential fish habitat. Construction of a tunnel crossing, however, was not technically practical

because of the structural and construction difficulties associated with subsurface geologic conditions and extreme tidal conditions. These conditions would make precision positioning and securing of the large tunnel sections a difficult construction task. This alternative was not considered technically feasible. Based on the screening criteria, a tunnel crossing was not considered to be reasonable. It was therefore eliminated from further consideration

A tidal power dam including a roadway for crossing Knik Arm was originally identified as a potential alternative because the relatively large tidal fluctuations experienced in Knik Arm could be used to generate electricity by releasing water at low tides that had been stored behind the dam (causeway) at high tides. A tidal power dam was evaluated, but not carried forward because of excessive costs (\$3.8 billion in 1981 dollars, based on previous studies) and lack of a project sponsor, which made it a financially infeasible alternative. Based on the screening criteria, the tidal power dam crossing was not considered a reasonable alternative and was eliminated from further consideration.

In Level 3 Screening, eleven corridors and five variants were evaluated. Alternatives that did not meet the screening criteria were eliminated from further consideration. Based on this screening, a No-Action and four reasonable build alternatives were carried forward for evaluation in the *Final EIS*.

On the Mat-Su crossing approach, two corridors were proposed: the Point MacKenzie Road Corridor and the Northern Access Corridor. Both corridors shared a roughly 9.5-mile alignment on Point MacKenzie Road from the Point MacKenzie Road and Burma Road intersection to the western boundary of the Port MacKenzie District. From this point, the two corridor alternatives diverged.

- The Point MacKenzie Road Corridor continued on the existing alignment of Point MacKenzie Road for 3.5 miles through the Port MacKenzie District until reaching the southern side of Lake Lorraine. The corridor then headed easterly to connect with the crossing corridor alternatives.
- The Northern Access had approximately 3.7 miles of new road, and continued east approximately one-half mile before making a broad turn northeast. The Northern Access corridor came to the top of a ridge line approximately 2,000 feet north of Lake Lorraine, then to the east side of Lake Lorraine and gradually descended to connect with crossing corridor alternatives.

The proposed crossing corridor alternatives included the Perpendicular, Skewed, and Southern Corridors, all of which measure about 2.5 miles and, on the Mat-su side, started approximately 500 feet south of the existing Anderson Dock.

- The Perpendicular Crossing Corridor connected with the Anchorage side at Green Lake Creek, approximately 2 miles north of Cairn Point. The corridor was perpendicular to tidal flows, maintained maximum separation from the deep-water submarine trough, and connected with the existing Point MacKenzie Road.
- The Skewed Crossing Corridor extended to approximately 1.25 miles north of Cairn Point. This crossing traversed Knik Arm at a skewed angle approximately 15 to 20 degrees from the Perpendicular Crossing Corridor. This corridor allowed a greater separation from the vicinity

of Sixmile Creek, decreased possible impact on Beluga activity, crossed a narrower band of intertidal zone, and shortened the Anchorage approach by about 3,000 feet.

- The Southern Crossing Corridor ended approximately 1.25 miles north of Cairn Point. This corridor aligned perpendicularly with tidal flows, balanced maximum separation from beluga activity north of Sixmile Creek while still maintaining safe distance from the submarine trough in Knik Arm, and avoided or minimized impacts on the intertidal zone of Knik Arm. The Southern Corridor increased the separation from critical military operations.

The proposed Anchorage Approach Corridors were the Below-the-Bluff and Above-the-Bluff Corridors, each with four variants in the vicinity of Government Hill, and four additional easterly corridors that traversed military lands.

The Below-the-bluff Corridor began as a southerly extension of any one of the three crossing corridors and extended along the Anchorage shoreline and western Elmendorf perimeter at the bottom of the bluff, then continued south, closely following the natural curvature of the shoreline. Approximately one-half mile south of Cairn Point, the corridor climbed slightly on a retained-earth fill system to provide grade separation between the corridor and the edge of POA. The remainder of the route connected to the A-C Couplet, Ingra-Gambell Couplet, or both through any of the variants. Each of these variants was approximately 1 mile in length. The Below-the-Bluff Corridor involved as much as 2 miles of armor-protected intertidal fill and could have included construction of an intersection to allow access to the POA.

The Above-the-bluff Corridor was a 4- to 5-mile corridor that began as a southerly extension of any one of the three crossing corridors on top of the Anchorage-side bluff on Elmendorf. From landfall, the corridor climbed the bluff heading southwest, and continued approximately 1 mile to Cairn Point, remaining within 500 feet of the shoreline. Upon reaching the top of the bluff at Cairn Point, the corridor turned south, and veered slightly inland to avoid a decommissioned military landfill along the bluff. Continuing south, the corridor encroached on the Elmendorf Cherry Hill housing complex. The remainder of the route continued southward and connected to the A-C Couplet viaduct and Ingra-Gambell Couplet viaduct through any of the variants.

Variants for the Below-the Bluff and Above-the-Bluff Corridors were West Bluff Drive, Degan Street, Erickson Street, and Elmendorf.

- The West Bluff Drive Variant turned southwest, and encroached on an existing tank farm west of West Bluff Drive before it transitioned to an elevated section to avoid conflicting with port access/operations and the ARRC rail line. It crossed West Bluff Drive and cut through more of the tank farm before it turned and followed the western tip of Government Hill. The corridor passed over Ocean Dock Road twice on an elevated viaduct, and tied into the A-C Couplet viaduct. It continued on a viaduct, crossing the Alaska Railroad track, Ship Creek, and a portion of the Ship Creek industrial area to connect into the Ingra-Gambell Couplet.
- The Degan Street Variant climbed the bluff east of the tank farm at the POA onto the southwest corner of Elmendorf. It curved southeast to follow Degan Street in a cut-and-cover tunnel. It then connected into East Loop Road and the A-C Couplet, and continued on a new viaduct, crossing the ARRC facilities, Ship Creek, and the Ship Creek industrial area before tying into the Ingra-Gambell Couplet.
- The Erickson Street Variant climbed up the face of the bluff using a retained-earth fill system. When it reached the AT&T buildings on Government Hill, it aligned with Erickson Street in a

cut-and-cover tunnel. This variant connected to East Loop Road and the A-C Couplet, and continued southeast on a new viaduct that crossed the ARRC facilities, Ship Creek, and the Ship Creek industrial area before tying into the Ingra-Gambell Couplet.

- The Elmendorf Variant climbed to the top the bluff to the southwest edge of the Elmendorf Cherry Hill housing. The variant continued southeast following the curvature of Arnold Drive, and turned south on the east side of Government Hill Elementary School where it encroached on military housing between Government Hill Elementary School and Arctic Warrior Drive. The route then followed Arctic Warrior Drive and encroached on the Government Hill Gate to Elmendorf. It then continued at-grade to East Loop Road and the A-C Couplet, turned southeast on a new viaduct, crossing the ARRC facilities, Ship Creek, and the Ship Creek industrial area before tying into the Ingra-Gambell Couplet.

The Post Road/Reeve Boulevard Corridor, Boniface Parkway Corridor, Muldoon Road Corridor, and Hiland Road Corridor all crossed military land by beginning as an easterly extension of any one of the three crossing corridors and extended east across the top of the bluff where the Elmendorf boundary begins.

- The Post Road/Reeve Boulevard Corridor was approximately 9.5 miles long, and was predominantly on military land. The corridor ran east onto Elmendorf north of the airfield, crossed Fairchild Avenue, and turned south along the main Alaska railroad track. The corridor then crossed the Fort Richardson railroad spur and Davis Highway, turned west and crossing Vandenberg Avenue and Pease Avenue, passed the Elmendorf access gate, and then became Reeve Boulevard and connected with 5th Avenue.
- The 7.75-mile Boniface Parkway Corridor traversed military lands (Elmendorf and Fort Richardson) to connect to the east abutment of the crossing to the Glenn Highway within the vicinity of the existing Boniface Parkway interchange.
- This 7.75-mile Muldoon Road Corridor traversed military lands (Elmendorf and Fort Richardson) to connect to the east abutment of the crossing to the Glenn Highway within the vicinity of the existing Muldoon Road interchange.
- The 10.75-mile Hiland Road Corridor traversed military lands (Elmendorf and Fort Richardson) to connect to the east abutment of the crossing to the Glenn Highway within the vicinity of the existing Hiland Road interchange.

Based on Level 3 Screening, four alternatives were carried forward for detailed evaluation in the *Final EIS*, along with the No-Action Alternative:

- Point MacKenzie Road – Degan Alternative (with the Southern Alignment, 8,200-foot and 14,000-foot bridge lengths, and a cut-and-cover tunnel under Degan Street)
- Point MacKenzie Road – Erickson Alternative (with the Southern Alignment, 8,200-foot and 14,000-foot bridge lengths, and a cut-and-cover tunnel under Erickson Street)
- Northern Access – Degan Alternative (with the Southern Alignment, 8,200-foot and 14,000-foot bridge lengths, and a cut-and-cover tunnel under Degan Street)
- Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot and 14,000-foot bridge lengths, and a cut-and-cover tunnel under Erickson Street)

As the list above indicates, the build alternatives evaluated in detail in the *Final EIS* did not constitute entirely separate routes or unique designs; instead, they were distinct combinations of

components (and their common elements) that offered obvious advantages in terms of overcoming geographic, socioeconomic, physical, environmental, and financial constraints while minimizing common impacts.

During the *Draft EIS* review phase, FHWA specifically requested agency and public comment regarding the Anchorage Approach Alternatives to assist the agency in selecting a Preferred Alternative. Public comments received ranged from simple statements of support or opposition, to complex technical discussions of project alternatives, study methods, determination and characterization of impacts, and recommendations for mitigation measures. FHWA used these comments in its decision-making process to help determine the Recommended Alternative and assist in the development of mitigation measures. The following federal agencies provided written comments: the U.S. Environmental Protection Agency (USEPA); the U.S. Army Corps of Engineers (USACE); the U.S. Department of the Interior (USDOI) National Park Service (NPS), Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), and Geologic Service (USGS); NOAA Fisheries; and the Marine Mammal Commission. Agency comments did not specifically address a preference related to Anchorage-side alternatives. The 45-day *Draft EIS and Draft Section 4(f) Evaluation* comment period required by CEQ began on September 15, 2006, and was extended from October 30, 2006, to November 17, 2006—a total comment period of 63 days. The extension was based on requests from agencies and the public. FHWA and KABATA received comments as noted below from federal and State agencies, local governments, tribes, and the public, including NGOs. All comments received have been documented and responded to in the *Final EIS* (discussed in Section 8 and referenced appendixes).

The *Final EIS* provides a detailed discussion of each reasonable alternative's direct, indirect, cumulative, and construction impacts on the natural and human environment. The discussion that follows presents the distinguishing characteristics of the reasonable alternatives, their environmental impacts, and the balancing of values on which the decision for the Selected Alternative was based.

A. No-Action Alternative

As required by NEPA, the No-Action Alternative was analyzed and evaluated in the context of all planned and programmed transportation improvements, including the Cook Inlet Ferry; proposed roadway improvements on Point MacKenzie Road, Burma Road, and Knik-Goose Bay Road; the Highway-to-Highway Connection (Seward Highway to Glenn Highway); and the Ingra-Gambell Extension to Whitney Road.

The No-Action Alternative would not accomplish any of the elements of the project's purpose and need.

Although the No-Action Alternative includes the Cook Inlet Ferry, it would not fulfill existing and future needs for high-capacity access to developable land needed to meet the growing housing and economic development demands of the projected Mat-Su population growth. Rather, the No-Action Alternative would result in persistent suburban growth outside Palmer and Wasilla, far from Anchorage, which would continue to add traffic in the congested Glenn Highway Corridor.

Although the No-Action Alternative includes the Cook Inlet Ferry, it would not provide a second, major north–south route in the region.

Under the No-Action Alternative, no additional means of moving freight between the ports and to Interior Alaska would be provided. The Cook Inlet Ferry would satisfy relatively low-volume, rather than long-term, high-volume travel demand. The ferry system is an initial step to improve access and connectivity, but it is not designed to carry heavy trucks and industrial traffic or to move a high volume of people, freight, and goods. The No-Action Alternative would not support the transportation needs of the forecast population and related economic development.

The No-Action Alternative's ferry service is an alternate route for some emergency purposes. The ferry, however, would not be able to handle large-scale movements of people and emergency responders in the event of a natural disaster. Furthermore, none of the planned transportation improvements that are part of the No-Action Alternative provide improved safety and transportation system redundancy using an alternative travel route, nor would they offer high-volume access among the region's airports; ports; hospitals; and fire, police, and disaster relief services for timely emergency response and evacuation.

The No-Action Alternative would not address the purpose and need of the project and was not selected.

B. Mat-Su Alternatives

Description

For the Mat-Su area of the project, the EIS evaluated two Mat-Su Approach alternatives: the Point MacKenzie Road Alternative and the Northern Access Alternative. Both alternatives begin at the intersection of Point MacKenzie Road with Burma Road and generally follow the existing roadway alignment south to the Port MacKenzie District boundary. The Northern Access Alternative then diverges on new alignment and traverses the uplands north of Lake Lorraine and heads south toward the Knik Arm bluff near Anderson Dock. The Point MacKenzie Road Alternative would continue to follow the existing Point MacKenzie Road alignment through the Port District for 2.5 miles and then would veer north toward Anderson Dock. To join the Crossing, a substantial cut through the ridge between Lake Lorraine and the Knik Arm shoreline would be needed. Under both alternatives, a toll plaza and intersection to control access to and from Port MacKenzie are included before the roadway reaches the shoreline. The full build-out of both alternatives requires a minimum 400-foot-wide ROW to accommodate a four-lane divided highway with controlled-access; two-lane, two-way frontage roads on both sides of the highway; and provisions for a multiuse pathway up to the western edge of the Port District. The functional classification of both Mat-Su Approach alternatives is rural principal arterial highway, with a design speed of 70 miles per hour (mph).

Comparison

Both Mat-Su Approach alternatives require similar amounts of ROW and have similar construction costs. Both alternatives were located to avoid wetlands and minimize impacts on wetlands when avoidance was not possible. Of the 92,580 acres of wetlands in the Mat-Su, the project will

indirectly affect approximately 450 acres. The Northern Access Alternative will directly affect 28 acres of wetland—9 fewer acres than would the Point MacKenzie Road Alternative. Because of the undeveloped nature of this area, no residential or business acquisitions or relocations are required under either Mat-Su Approach Alternative.

FHWA identified the Northern Access Alternative as the Recommended Alternative in the *Final EIS* because of the alternative's consistency with Mat-Su Borough and Port MacKenzie planning objectives (ROW impacts and construction costs are similar under both Mat-Su Approach Alternatives). The Northern Access Alternative will remove through-traffic from Port MacKenzie operation areas, will be more conducive to Port MacKenzie development, has less wetland impact, and is favored by Mat-Su Borough and Port MacKenzie officials.

Selected Alternative for the Mat-Su Approach

No negative comments were received during the *Draft EIS* comment and review period regarding the identification of the Northern Access Alternative as the Preferred Alternative. In the *Final EIS*, the Northern Access Alternative was retained as the Recommended Alternative and, for the reasons noted above; the Northern Access Alternative is the Selected Alternative for the Mat-Su Approach.

C. Crossing Alternatives (Southern Alignment Alternatives)

Description

Two bridges were evaluated for the Southern Alignment crossing of Knik Arm: a 14,000-foot-long, pier-supported bridge spanning the entire width of the arm, and an 8,200-foot-long, pier-supported bridge with armored,* gravel-fill roadway sections completing the crossing. The 14,000-foot bridge length did not meet stated purpose and need criteria for financial feasibility. This alternative was, however, carried forward solely for comparative evaluation based on requests from environmental resource and permitting agencies.

The 8,200-foot-long bridge will be supported on piers. On both ends of the 8,200-foot bridge, an approach constructed of gravel fill with armor rock will have adequate width for a four-lane, divided highway and a multiuse pathway. On the Anchorage side, the Southern Alignment will curve and run south along the shoreline around Cairn Point to the northern edge of the future POA expansion. The functional classification of the Crossing will be a rural principal arterial highway with a design speed of 70 mph that will ultimately carry four lanes of traffic and a multiuse pathway.

Comparison

The EIS evaluated the project's impact on Knik Arm. Detailed analysis showed that neither bridge alternative was expected to adversely affect beluga whale or anadromous fish passage, tidal flows, or naturally occurring sedimentation in the vicinity of the POA.

* Armor rock (3–5 feet in diameter) will be placed on the slopes of the gravel-fill roadway sections to prevent undercutting and erosion resulting from tidal currents, storm surges, wave run-up, and ice floes.

Key impact categories that distinguish between the Southern Alignment Alternatives evaluated in the EIS are impacts on essential fish habitat (EFH) and to beluga whales from more fill versus the installation of more piers; construction costs, time, and methods; and changes to Knik Arm hydrology. Although the 8,200-foot-long bridge will have a lower construction cost and will be easier to construct, it will also result in more marine fill in EFH, including subtidal and intertidal waters. More fill, however, means the 8,200-foot bridge will require about half the number of piers as would the 14,000-foot-long bridge. Fewer piers will result in shorter construction time and a shorter duration of construction-related in-water noise, a key consideration regarding this alternative's potential to adversely affect beluga whales and out-migrating juvenile salmon. Hydrodynamic modeling shows that the 8,200-foot-long bridge will not affect tidal flows in Knik Arm or naturally occurring sedimentation in the vicinity of the POA (*Hydrology and Hydraulic Environment of Knik Arm* [KABATA, 2006]).

FHWA identified the 8,200-foot pier-supported bridge as the Preferred Alternative in the *Draft EIS* because, in addition to its better constructability (lower construction costs, shorter construction time), a shorter bridge will have fewer piers, resulting in less in-water construction noise as well as less temporary disruption to beluga whale behavior and movement patterns. NMFS issued a Biological Opinion for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010, which states: “NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat” (See Section VI. Z, *Mitigation Measures for Impacts on Threatened or Endangered Species*, below and Appendix C for further details).

Selected Alternative for the Crossing

FHWA retained the 8,200-foot-long bridge as the Recommended Alternative in the *Final EIS* and identifies this alternative as the Selected Alternative for the reasons noted above. Based on agency comments on the *Draft EIS* and *Final EIS* and results from additional hydrodynamic modeling, close agency coordination will continue during the design and permitting phases of the project.

D. Anchorage Alternatives

Description

The *Draft EIS* evaluated two Anchorage Approach Alternatives: The Degan Alternative and Erickson Alternative. Both alternatives begin at the boundary of the future POA expansion. The logical terminus for both alternatives is the intersection of the A-C Couplet with 3rd Avenue during Phase 1. For either alternative, construction of Phase 2 occurs as traffic volumes warrant. The alternatives' locations were selected because their topographic and site conditions will be conducive to constructing a cut-and-cover tunnel less than 800 feet long under Government Hill, which will minimize impacts on the community. In the vicinity of the POA, the functional classification of the roadway transitions from a rural principal arterial highway to an urban principal arterial highway, with a corresponding design speed transition from a minimum of 70 mph to a minimum of 50 mph. Both alignments require adequate ROW to accommodate a divided, four-lane, controlled-access highway, and a multiuse pathway. ROW widths at intersections and ramps vary from 125 feet to 600 feet for the Erickson Alternative, and 125 feet to 1,000 feet for the Degan Alternative.

Under the Degan Alternative, Phase 1 would include a four-lane, 790-foot-long cut-and-cover tunnel under Degan Street connecting to East Loop Road with an at-grade signalized intersection. Phase 2 would modify Phase 1 construction to allow a connection to a viaduct traversing the Ship Creek industrial area to tie into the Ingra-Gambell Couplet. The signalized intersection constructed in Phase 1 would be removed, and East Loop Road would be elevated to cross over the Degan Alignment. Construction of Phase 2 would occur as traffic volumes would warrant.

Under the Erickson Alternative, the initial construction will include a two-lane, two-way 790-foot-long cut-and-cover tunnel under Erickson Street, which will connect to the A-C Couplet by way of East Loop Road. East Loop Road will be modified for the south tunnel approach. Phase 2 will expand the cut-and-cover tunnel to add four more lanes and provide a connection to a viaduct that will traverse the Ship Creek industrial area to tie into the Ingra-Gambell Couplet. Construction of Phase 2 will occur as traffic volumes warrant.

Comparison

Both Anchorage Approach alternatives would create impacts on residential, commercial, and industrial lands, and Section 4(f) properties (Harvard and Sunset Parks and historic properties). The Degan Alternative would need a signalized intersection on Loop Road to provide access to Government Hill. The Degan Alternative would need the ROW to be wider than the Erickson Alternative ROW at its widest point. Under the Degan Alternative, drivers from the Government Hill neighborhood would not have direct access to the Ingra-Gambell Couplet; on- and off-ramps north of Government Hill would, however, provide access to the Mat-Su. Under the Degan Alternative, locating the Phase 2 viaduct across Ship Creek in a manner that would not have an adverse impact on railroad operations would cause additional impacts on residences and Sunset Park. The Degan Alternative would take 65 percent of Harvard Park, 59 percent of Sunset Park, and would adversely affect the Anchorage Square & Round Dance Club. The Degan Alternative, however, would be the less expensive alternative.

Unlike the Degan Alternative, the Erickson Alternative will allow for more direct traffic flow that will avoid local streets. No signalized intersection will be needed, and north and south ramps will give Government Hill drivers easy access to Downtown Anchorage and the Mat-Su. Phase 2 expansion will require additional tunnel construction and the Government Hill neighborhood will experience a second period of construction impacts. Construction activities could temporarily disrupt the main route through Government Hill to the military bases, but other readily accessible routes to and from the bases exist. The Erickson Alternative will adversely affect the Government Hill Urban Renewal Historic District, including removal of three contributing structures, and will take 2 percent of Harvard Park and 31 percent of Sunset Park.

The estimated construction cost for the Erickson Alternative is more than that of the Degan Alternative—\$6.4 million more for Phase 1 and \$16.4 million more for Phase 2.

The *Draft EIS* did not identify a Preferred Alternative for the Anchorage Approach.

Comments opposing the Degan Alternative cited adverse impacts on homes, impacts on the Anchorage Square & Round Dance Club and Sunset Park, safety issues caused by a traffic signal considered to be dangerous, and introduction of new traffic patterns that would adversely affect all

Government Hill properties, including historic properties. Comments in opposition to the Erickson Alternative cited adverse impacts on homes and Sunset Park and alteration of the suburban feel, design, and setting of the Government Hill Urban Renewal Historic District.

No public comments were received in support of the Degan Alternative. Some comments supported the Erickson Alternative because of the alternative's comparatively smaller number of impacts on the Government Hill neighborhood and its relatively better design, as described above.

The Elm Street Variant

Following the close of the formal scoping period, FHWA convened and sponsored a 2-day workshop in December 2005, with members of the Government Hill Community Council (GHCC) on Context-Sensitive Solutions (CSS) for the proposed project. This workshop came about as a result of ongoing discussions between FHWA and GHCC about how to best meet the neighborhood's needs as the EIS process moved forward. As a follow-up to the CSS workshop, FHWA hosted a meeting in response to GHCC requests for a stakeholder meeting at which potential new corridors could be discussed. Attendees at this meeting included representatives of GHCC, the Municipality of Anchorage (MOA), and the Alaska Railroad Corporation (ARRC). Following the stakeholder meeting, three one-on-one meetings between Study Team members and a GHCC representative were held to further define GHCC's request to look at additional corridors. GHCC representatives identified a modification of the Anchorage Access Solution, known as the "Elm Street Variant," that would connect to the Below-the-Bluff Corridor. The Elm Street Variant was selected as GHCC's favored route. Because the Elm Street Variant was developed after other corridors and variants had been evaluated during the scoping process and following publication of the *Scoping Summary Report*, more information, including more detailed cost evaluations, was available than that used to screen other corridors and variants. That additional information, where relevant, facilitated more direct comparison with the variants brought forward for detailed study in the *Draft EIS*: the Degan and Erickson Variants (later to become alternatives).

Unlike the Degan and Erickson Alternatives that could readily incorporate a cut-and-cover tunnel by taking advantage of naturally occurring topographic conditions, the Elm Street Variant would require forcing a tunnel into an otherwise relatively flat terrain. Because of this condition, long approach trenches or depressed roadways would be required to achieve a subterranean alignment to match the depth of the other two alternatives' cut-and-cover tunnels.

When evaluated against purpose and need and technical screening criteria, FHWA determined that the Elm Street Alternative would not be reasonable because it would:

- result in the relocation of 148 Elmendorf Air Force Base (Elmendorf) households, ROW, and facilities at an approximate cost of \$111.3 million in addition to construction costs
- use Harvard Park and the Government Hill Elementary School playground, both of which FHWA determined to be Section 4(f) properties
- result in the relocation of 66 Government Hill households, more than any other variant, at an approximate cost of \$11.5 million in addition to construction costs
- result in the relocation of 11 Government Hill commercial properties at an approximate cost of nearly \$6 million in addition to construction costs
- result in the relocation of industrial properties within the Ship Creek rail yard at a cost of approximately \$5.7 million

- necessitate construction of approximately 3,700 feet of depressed roadway tunnel approaches to meet the required depths for two tunnels
- create excessive adverse effects to military land and operations, including relocation of Elmendorf's central roadway, the relocation of its principal access gate, and exacerbation of its housing shortage
- adversely affect community cohesion on the east side of Government Hill with an open trench with engineered vertical walls that would require bridges to maintain connectivity to the rest of the community
- traverse two National Register of Historic Places (National Register) historic districts and adversely affect two individually eligible properties, the Square & Round Dance Club and historic water tower

Selected Alternative for Anchorage Approach

In the *Final EIS*, FHWA identified the Erickson Alternative as the Recommended Alternative. The Erickson Alternative will include a cut-and-cover tunnel beneath Erickson Street through Government Hill, a connection to the A-C Couplet, and, when traffic volumes warrant, a Phase-2 connection to the Ingra-Gambell Couplet and the planned Highway-to-Highway Project. FHWA selected the Erickson Alternative because, among the build alternatives, it had the least overall harm to Section 4(f) properties and, on balance, it was superior at minimizing environmental, stakeholder, and community impacts. Accordingly, the Erickson Alternative is the Selected Alternative for the Anchorage Approach.

In summary, FHWA identifies the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, and cut-and-cover tunnel under Erickson Street) as the Selected Alternative.

E. Environmentally Preferred Alternative

FHWA has identified the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, and cut-and-cover tunnel under Erickson Street) as the Environmentally Preferred Alternative, and as the Selected Alternative. The Selected Alternative will create fewer impacts on the Government Hill neighborhood and parklands, remove through-traffic from Port MacKenzie operations, be more conducive to Port MacKenzie development, have fewer wetland impacts, have less in-water construction time resulting in less in-water construction noise impacts on marine mammals, and is favored by Mat-Su Borough and Port MacKenzie officials.

IV. Section 4(f)

FHWA approved new regulations related to Section 4(f) subsequent to the publication of the *Final EIS and Final Section 4(f) Evaluation*. The *Draft* and *Final Section 4(f) Evaluations* were prepared following 23 C.F.R. § 771.135. Section 771.135 was replaced in April 2008 with 23 C.F.R. § 774, which restated and clarified measures in the earlier regulations and established some relatively minor new procedures such as the least overall harm evaluation when all the alternatives use Section 4(f) resources, as discussed below. See 23 C.F.R. § 774.3(c).

FHWA selected the Northern Access Alternative for the Mat-Su Approach based on the *Final Section 4(f) Evaluation*, review of the *Final EIS*, and associated public and agency comments. The Northern Access Alternative for the Mat-Su Approach was selected over the Point MacKenzie Road Alternative, which would have had minor impacts on the Mat-Su Borough Recreational Trailhead. The Northern Access Alternative will not have any Section 4(f) impacts because it will avoid all Section 4(f) properties. The Northern Access Selected Alternative will not result in the direct or constructive use of land from any public park, recreation area, wildlife or waterfowl refuge, or historic properties.

The bridge crossing Knik Arm does not affect any Section 4(f) property.

FHWA selected the Erickson Alternative for the Anchorage Approach. In the Anchorage area, no prudent and feasible alternative would entirely avoid Section 4(f) properties. The *Final Section 4(f) Evaluation*, which is summarized in Section IV of this ROD, properly examined alternatives that might avoid Section 4(f) properties and found none to be a “feasible and prudent avoidance alternative” as defined in the new regulations (23 C.F.R. § 774.17).

Because both the Degan and Erickson Alternatives use Section 4(f) properties, a least-overall-harm analysis was necessary.* The least-overall-harm analysis is summarized below. Table 1 presents seven factors required by the new regulations. Further detail on least overall harm appears in the *Final Section 4(f) Evaluation*. Measures to minimize harm to affected properties are also described at the end of this section, and implementation of these measures is assumed in discussion of least overall harm.

FHWA’s new regulations, at 23 C.F.R. § 774.3(c)(1), provide criteria for conducting a least-overall-harm analysis:

Least overall harm is determined by balancing the following factors:

- (i) The ability to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property)
- (ii) The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
- (iii) The relative significance of each Section 4(f) property
- (iv) The views of the official(s) with jurisdiction over each Section 4(f) property
- (v) The degree to which each alternative meets the purpose and need for the project
- (vi) After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f)
- (vii) Substantial differences in costs among the alternatives

* The least-overall-harm analysis was called “least *net* harm” in previous guidance and in the *Final Section 4(f) Evaluation*.

Table 1 Summary of least-overall-harm factors for Anchorage Approach alternatives

	Degan Alternative	Erickson Alternative
Number of Section 4(f) properties adversely affected	Parks = 2 (total acreage = 6.89) Historic properties = 1 Historic districts = 0	Parks = 2 (total acreage = 1.79) Historic properties = 3 Historic districts = 1
i. Ability to mitigate adverse impacts	<p>Moderate ability to mitigate.</p> <p>Ability to mitigate adverse impacts on parks would be moderate at best.</p> <p>No good replacement options would be available on Government Hill for eliminated Harvard Park land and facilities.</p> <p>Funding provided to Municipality would help reestablish functions on Government Hill and elsewhere.</p> <p>Historic Anchorage Square & Round Dance Club would be documented and evaluated for relocation.</p> <p>Addressed in Section 5.3 under Effects of Park Mitigation and Effects of Historic Mitigation in <i>Final Section 4(f) Evaluation</i>.</p>	<p>Moderate ability to mitigate.</p> <p>Ability to mitigate adverse impacts on parks would be moderate at best.</p> <p>Substantial mitigation for recontouring and reestablishing park facilities in Sunset Park will ensure no loss of facilities, but acreage will be less without good replacement options on Government Hill.</p> <p>Funding to Municipality will help reestablish functions on Government Hill and elsewhere.</p> <p>Three historic homes contributing to the Government Hill Urban Renewal Historic District will be documented and relocated if possible, but will not likely be preserved in the same context.</p> <p>Addressed in Section 5.3 under Effects of Park Mitigation and Effects of Historic Mitigation in <i>Final Section 4(f) Evaluation</i>.</p>
ii. Severity of impacts after mitigation	<p>Moderate (+) severity of impacts after mitigation</p> <p>Impact greater than with Erickson Alternative because Harvard Park functions would be almost entirely eliminated without good replacement options.</p> <p>Addressed in Section 5.3 Effects of Park Mitigation and Effects of Historic Mitigation in <i>Final Section 4(f) Evaluation</i>.</p>	<p>Moderate (+) severity of impacts after mitigation</p> <p>Impacts are less than with Degan Alternative because greater function of the two parks will be retained.</p> <p>Addressed in Section 5.3 Effects of Park Mitigation and Effects of Historic Mitigation in <i>Final Section 4(f) Evaluation</i>.</p>

(continued on next page)

Table 1 Summary of least-overall-harm factors for Anchorage Approach alternatives
(continued)

	Degan Alternative	Erickson Alternative
iii. Relative significance of 4(f) properties and iv. Views of officials with jurisdiction	<p>Affected park facilities are the primary parks in Government Hill and are of high value to Municipality and community.</p> <p>Historic Anchorage Square & Round Dance Club is eligible for listing in the National Register of Historic Places and is also important as a functioning public building to the Municipality and community.</p> <p><i>Views of officials addressed in Section 6 Coordination in Final EIS; also in Section 5.1.</i></p>	<p>Affected park facilities are the primary parks in Government Hill and are of high value to Municipality and community.</p> <p>Historic homes and district eligible for listing in the National Register of Historic Places. Eligibility had not been recognized before this project.</p> <p><i>Views of officials addressed in Section 6 Coordination in Final EIS; also in Section 5.1.</i></p>
v. Degree to which alternative meets purpose and need criteria^a	<p>The alternatives are virtually identical in meeting the purpose and need criteria.</p> <p>Both are considered financially feasible and reasonably efficient; both meet identified needs for (1) accommodating population growth, (2) connectivity to move people and goods, (3) safety and transportation system redundancy.</p>	
vi. Magnitude of non-4(f) impacts^b	<p>Minor differences:</p> <ul style="list-style-type: none"> • 28 relocations • ROW acquisition: 8 homes; 2 business buildings; 2 nonprofits; 5 industrial buildings • 10 hazardous/contaminated sites • 10.6 acres of wetlands 	<p>Minor differences:</p> <ul style="list-style-type: none"> • 27 relocations • ROW acquisition: 9 homes; 4 business buildings; 5 industrial buildings • 10 hazardous/contaminated sites • 11.1 acres of wetlands
vii. Substantial cost difference^b	<p>Construction cost is lower; not a <i>substantial</i> cost difference.</p> <p>Phase 1 construction = \$56.7 million</p> <p>Phase 2 construction = \$218 million</p> <p>Total construction = \$274.7 million</p> <p>ROW acquisition = \$18 million</p>	<p>Construction cost is higher; not a <i>substantial</i> cost difference.</p> <p>Phase 1 construction = \$63.1 million</p> <p>Phase 2 construction = \$234.4 million</p> <p>Total construction = \$297.5 million</p> <p>ROW acquisition = \$11.5 million</p>

^a The project purpose and need are heavily paraphrased for this table. See *Final EIS*, Chapter 1.

^b Items vi and vii consider only the Anchorage Approach segment of the project.

Historic Properties

The Erickson Alternative will need the use of 1.36 acre of the Government Hill Urban Renewal Historic District and will need the removal of three contributing structures. The Degan Alternative would have removed the historic Anchorage Square & Round Dance Club, but would have avoided impacts on historic districts. The decision weighed the loss of a single, larger,

independently eligible community building reflecting an earlier period of social history against the loss of three smaller and more recent residential buildings that contribute to a larger historic district.

As part of the process stipulated by Section 106 of the National Historic Preservation Act (NHPA), a signed Programmatic Agreement (PA) has been implemented to replace the draft Memorandum of Agreement (MOA) undertaken during the *Final EIS*. The PA (see Appendix B) for the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot-bridge length, and cut-and-cover tunnel under Erickson Street) provides for archaeological surveys of affected military land in the project area, architectural and photographic documentation of affected historic properties on Government Hill, funding for and development of a Government Hill Neighborhood Plan, marketing and potential relocation of affected historic properties on Government Hill, context-sensitive mitigation of the tunnel “lids,” development of historic preservation plans for the MOA and for the Mat-Su Borough, funding for a KABATA Liaison, and funding for development of historic preservation plans and consultation for the Mat-Su Borough, the Knik Tribal Council, and the Native Village of Eklutna. Individual Memorandums of Understanding (MOUs) address how the consulting parties will accomplish the mitigation efforts outlined in the PA. The individual MOUs (see Appendix B) are carried out between the FHWA and each individual consulting party. Similar mitigation measures could be applied to the Degan Alternative and the Anchorage Square & Round Dance Club. Context-sensitive mitigation of the tunnel lid would have had less importance under the Degan Alternative, but still could have been incorporated in design of the tunnel lid, even though it would not be located within an affected historic district. One or more of the three historic properties contributing to the Government Hill Urban Renewal Historic District could be relocated (under the Erickson Alternative) in contrast to the larger Anchorage Square & Round Dance Club (under the Degan Alternative), which would be difficult, if not impossible, to relocate. With these types of mitigation in place for both the Degan and Erickson Alternatives, the least-overall-harm analysis for historic properties would not clearly favor one alternative over the other.

Recreational Properties

The Degan Alternative would have required 3.68 acres of controlled-access ROW through the center of Harvard Park and 3.21 acres of controlled-access ROW within the southern half of Sunset Park. At Harvard Park, all affected structures and amenities would have been lost in Phase 1: the parking lot, two tennis courts, and the basketball court. The Anchorage Square & Round Dance Club and the Anchorage Curling Club also would have been affected in Phase 1. At Sunset Park, facilities that would have been lost (all in Phase 2) include portions of the playground equipment area, picnic table area, and sledding area. A picnic shelter and the parking lot would not have been affected. The area that would not have been required for actual project ROW would have been retained as a “mini-park” or buffer/green space for the Government Hill Community. Sunset Park use could have continued in its current form until Phase 2, which is estimated to be 11 to 12 years after completion of Phase 1.

The Erickson Alternative will require 1.70 acre of controlled-access ROW through Sunset Park and 0.1 acre of controlled-access ROW along the southeastern edge of Harvard Park. All existing facilities at Sunset Park will be displaced in Phase 2: a picnic shelter, playground equipment, picnic tables, a sledding area, and the parking lot. The park could continue to function as it does

today until Phase 2, which is estimated to be 11 to 12 years after completion of Phase 1. In Phase 2, the area not needed for actual project ROW will be retained as buffer/green space or mini-park for the Government Hill Community. As mitigation, pedestrian access will be provided and the park amenities will be reconstructed within the smaller space. The minor ROW impacts on Harvard Park will convert a long, very narrow strip of parkland to a transportation purpose for widening existing Loop Road. The road already exists adjacent to these parklands. The impact area will be minimal. Existing park facilities will not be affected; therefore, the attributes, features, and activities that qualify the land as eligible for Section 4(f) protection will not be adversely affected. Harvard Park, as municipally designated parkland, could continue to function as it does today.

Alternative with Least Overall Harm

When park and historic property impacts are weighed together with the seven factors shown in Table 1, the least-overall-harm analysis favors the Erickson Alternative, primarily because mitigation will result in the retention of more park facilities on more Government Hill park acreage. As described above, the impacts to historic properties from the two alternatives are different, but neither alternative is clearly worse than the other. When considering recreational properties, the opportunity for on-site mitigation of Sunset Park is the key variable. Although Sunset Park will be reduced in size under the Erickson Alternative, pedestrian access will be reestablished, likely from the north over the tunnel lid, and all current amenities will remain in a reconfigured format. Harvard Park under the Degan Alternative would have lost its facilities and only small areas of green land would have remained. The Erickson Alternative was selected because its Section 4(f) impacts, with mitigation, would be less than the Section 4(f) impacts of the Degan Alternative, and less than would be the case with those of any other build alternatives evaluated.

Taking into consideration the statute's preservation purpose, the Northern Access – Erickson Alternative will cause the least overall harm to Section 4(f) properties.

All possible planning to minimize harm to Section 4(f) property, as defined in 23 C.F.R. § 774.17, has been undertaken in selecting the Erickson Alternative. To minimize surface impacts, design modifications, such as use of nearly vertical walls and the cut-and-cover tunnels, have been incorporated. Open trenches with sloped sides would have used much more parkland and further hindered access to Sunset Park. Land replacement for lost park acreage was considered, but no suitable land is available on Government Hill. Monetary compensation will be provided for the loss of parkland. For impacts on three historic properties and subsequent to the Government Hill Urban Renewal Historic District, the Section 106 PA was negotiated in consultation with the SHPO, ACHP, and other consulting parties and outlines a process to address effects on the historic features and attributes of the district. In addition, an MOU has been developed with the MOA to address adverse impacts on the Government Hill Urban Renewal Historic District identified during the Section 106 process as outlined in Section V of the ROD, and as described further below. The expense involved in “all possible planning to minimize harm” (the mitigation and commitments detailed in the following paragraphs) has been determined reasonable by FHWA. By their action in signing the Section 106 PA, consulting parties have agreed that historic property mitigation and commitments are acceptable.

Section 4(f) Mitigation and Commitments

Park and Recreation Mitigation. With implementation of Phase 2 of the Erickson Alternative, Sunset Park's remaining land will be cut off from street access by the four-lane highway built in an open trench. For loss of the Neighborhood Use Area – Neighborhood Park function of Sunset Park, KABATA will provide the following mitigation:

- ***Sunset Park Refinements.*** The parkland that would not be required for ROW will be proposed to be retained as a mini-park and buffer/green space for the Government Hill Community. In addition, because some use value would remain for Sunset Park, KABATA will work with the MOA to identify public access to the park over the southeastern end of the tunnel lid (near the intersection of Loop Road and Hollywood Drive), or possibly use a pedestrian crosswalk over the project roadway. In this park, a dip in topography would mean that a portion of the road would not be in a trench and would be open to the park area, at approximately the same grade. To reduce noise and visual intrusion, the trench wall could be continued across this dip in topography and, pending design coordination with the MOA, the park side of the wall could be used as a park feature. This would enhance the value of the park remnant. The existing picnic shelter will be relocated or replaced within the park. The existing playground will be physically unaffected, but will be partially relocated or fenced off from the highway. The existing picnic tables will be relocated slightly. The disturbed topography will be recontoured for park uses, including sledding. Although the existing parking lot will be eliminated, KABATA will work with the MOA to identify parking spaces at the new public access area within the new highway ROW. Subject to consultation during the project's final design, all of this will be addressed in a park planning effort conducted in consultation with the Municipal Parks Department with the goal of remaking the park, now classified as a Neighborhood Use Area – Neighborhood Park, into a workable park classified as a Neighborhood Use Area – Mini-Park. The park's existing amenities will remain on a smaller land parcel.
- ***Cunningham Park Expansion.*** Subject to consultation with the MOA during the project's final design, KABATA will work with the Municipality to investigate the potential of vacating the far northern end of the Cunningham Street ROW and adding the vacated land to Cunningham Park, which is currently too small to be of practical use. The vacated portion of Cunningham Street will be a segment approximately 80 feet long between East Cook Avenue and West Bluff Drive. This will add 0.13 acre to the existing Cunningham Park (0.05 acre), for a total of 0.18 acre. Although this is technically smaller than the 1-acre minimum guideline for mini-parks in Anchorage, it will be large enough for minor park development (e.g., overlook bench and small play area) and will be much larger than the existing Cunningham Park.
- ***Tunnel "Lid" Park Amenities.*** Installation of minor park amenities will be included on the lid of the cut-and-cover tunnel along the redesigned Erickson Street. This will be addressed during a Context-sensitive Solutions workshop with the Government Hill Community. It is anticipated there may be 1–2 acres of area in discontinuous patches that will be appropriate for surface pedestrian and park activities. Although some land uses and activities may no longer be appropriate on the lid of a cut-and-cover tunnel, there will be opportunities for green space, parkland, trails, parking, playgrounds, and general interpretation for historic properties. If the final design allows sufficient space, parking and

trail access directly into Sunset Park from the intersection of Hollywood Drive and Loop Road will be provided over the southeastern end of the tunnel lid.

- **Greenbelt Trail Construction.** The Erickson Alternative will include an abutment within the Government Hill Greenbelt – East Bluff parcel for the viaduct over the Ship Creek rail yard. Although FHWA has determined that the Greenbelt parcel is not subject to Section 4(f) protection, it is important to the MOA and the neighborhood, and it provides an opportunity for mitigation of impacts on other properties that are subject to Section 4(f) protection. The easternmost half of the East Bluff is an area once mined for gravel; subject to consultation with the Municipality (holder of the long-term lease) and with the ARRC (land owner) during final project design, the project will extend a paved bicycle trail from the Sunset Park area through the greenbelt to its easternmost end as proposed in the *Anchorage Areawide Trails Plan*. Land adjacent to the trail that was previously used for gravel mining and vegetation is sparse and will be landscaped.
- **Payment for Parkland.** The project will pay a fee based on the fair market value for the entirety of Sunset Park to be used for park planning and park replacement related to loss of Sunset Park’s status as a Neighborhood Use Park. The funds will be paid to the MOA during the Phase 1 ROW acquisition phase, even though Sunset Park will remain unchanged until Phase 2 of construction. Considering the time value of money, the Municipality may then take advantage of having the funds in advance for mitigation and having full use of the park for an extended period until the parkland is needed for highway construction for Phase 2. The Municipality and Government Hill Community could decide together how best to use the funds to further mitigate the loss of parkland. Also, although FHWA’s May 4, 2007, letter to the Municipality indicated FHWA will pay for Sunset Park “if the Municipality prefers not to have the remnant of Sunset Park as a Neighborhood Use Area – Mini-Park,” the *Final Section 4(f) Evaluation* clarified that it is FHWA’s and KABATA’s intention during Phase 2 construction to undertake the physical mitigation described above under the “Sunset Park Refinements” paragraph, no matter how the Municipality might classify the resulting smaller park, *and* to pay the funds described in this paragraph for loss of Neighborhood Use Area – Neighborhood Park status.

All of the above is subject to further consultation and adjustment based on MOA concerns and final design features such as amount of ROW or physical space available for mitigation efforts.

Historic Properties Mitigation. Impacts on three historic properties determined to be contributing elements of the Government Hill Urban Renewal Historic District will be mitigated according to the provisions of the PA and the MOUs described below. Signed by FHWA, ACHP, and SHPO, these were created under procedures of Section 106 of the National Historic Preservation Act (see PA and MOUs in Appendix B). The Memorandum of Agreement in the *Final EIS* was based on a draft agreement that had been circulated as a first step in developing mitigation agreements and was the subject of ongoing consultation. It is the final PA that will govern mitigation efforts. Full detail is not included here, but key elements include:

1. Hire a staff liaison for addressing and coordinating cultural and historic site issues (see PA Section III. A).
2. Ensure contractor and contract adherence to the PA (see PA Section II. B).

3. Provide for archaeological monitoring where appropriate during construction (see PA Section II. C).
4. Ensure proper treatment of any human remains that might be discovered as agreed in the PA, following State and federal processes (see PA Section II. D).
5. Undertake architectural documentation of affected Government Hill historic properties according to the Secretary of the Interior's Standards for Architectural and Engineering Documentation (see PA Section II. E).
6. Market the three identified Government Hill historic properties with the intention of relocating and preserving them (see PA Section II. F).
7. Fund and develop, in cooperation with the MOA, SHPO, and GHCC, a Government Hill Neighborhood Plan (see PA Section II. G).
8. Consult and collaborate with the Government Hill Community early in the design stages of Phase 1 and Phase 2 of the project (see PA Section II. H).
9. Develop context-sensitive mitigation for the cut-and-cover tunnel and tunnel lid (see PA Section II. I).
10. Provide for collection and curation of any artifacts or faunal materials recovered in accordance with 36 C.F.R. § 79 Curation of Federally owned and administered Archaeological Collections (see PA Section II. J).
11. Develop and follow a construction management plan to minimize impacts on access and economic disruption of the Government Hill Community during construction (see PA Section II. K).
12. Monitor air quality before and after construction to ensure commitment to the Anchorage Metropolitan Area Transportation Solutions (AMATS) *Long-Range Transportation Plan* and to determine whether historic properties have been affected (see PA Section II. L).

Additional mitigation measures for indirect effects will include funding historic preservation plans for the certified local government organizations in Anchorage (Government Hill, Downtown, South Addition, and Fairview) and the Mat-Su Borough, funding two part-time staff positions for the Knik Tribal Council and Native Village of Eklutna to work with the Mat-Su Borough on the development of preservation plans, funding field investigations associated with the Mat-Su Historic Preservation Plan, funding for geographic information system (GIS) and Alaska Heritage Resources Survey (AHRS) data entry for Mat-Su Borough cultural resources, and continued Tribal consultation and monitoring during the Elmendorf archaeological survey. The individual MOUs describe responsibilities of the MOA, Mat-Su, Knik Tribal Council, Native Village of Eklutna, and SHPO and the commitment by FHWA to address these needs. See Appendix B.

V. Section 106

Following FHWA approval of the *Final EIS/Final Section 4(f) Evaluation* in 2007, Section 106 activities and coordination continued for the purpose of developing measures to mitigate adverse impacts on cultural resources that were identified in the *Final EIS*. These Section 106 issues were resolved with signing of a Programmatic Agreement in December 2008 (see Appendix B).

Although mitigation measures were identified by the end of 2008, negotiations and consultation activities toward implementing agreements continued through January 2010.

Separate MOUs were developed for implementation of the PA to address adverse impacts identified during the Section 106 process as outlined in Section V of the PA. MOUs were executed between FHWA and the Alaska SHPO, Matanuska-Susitna Borough, Knik Tribal Council, and Native Village of Eklutna in July and September 2009, and with the MOA in January 2010. The MOUs are attached in Appendix B with the PA. FHWA has developed MOUs with identified consulting parties to implement the mitigation measures outlined in the PA. See PA Section V. D.

A provision of the signed PA included stipulations for cultural resources surveys to be completed on military land (PA Section II). A cultural resources survey of land managed by Elmendorf was completed in September 2009 and was reported on to consulting parties September 11, 2009. No cultural resources were identified as a result of the survey, and a subsequent finding of No Historic Properties Affected was submitted by FHWA to SHPO on January 11, 2010, for its review and concurrence. SHPO concurred on February 19, 2010.

To determine whether adverse impacts would occur to identified historic properties, unidentified historic properties, or properties that may become eligible over the passage of time, FHWA will assess traffic impacts no later than 1 year prior to the scheduled construction of Phase 2 and consult with consulting parties regarding the potential need for any additional mitigation. See PA Section V. B.

If any properties previously considered not eligible are later determined to be eligible as the result of future identification and evaluation efforts or because of inadvertent discoveries, the effects on those properties will be considered as part of project implementation. FHWA will consult with identified consulting parties regarding eligibility and apply the Criteria of Adverse Effects, pursuant to 36 C.F.R. § 800.5. See PA Section V. C.

While not a Section 106 mitigation measure, to recognize the importance of Tak'at as a traditional cultural property, FHWA and KABATA will, subject to State of Alaska laws governing taking of fish, secure a replacement fish camp to be used by the Knik Tribal Council and the Native Village of Eklutna. It has been agreed that the site selected will have these key attributes: fishability, access, land acquisition availability, and safety. The Tribes will determine how the site will be used and shared. See PA Section VI.

Should any previously unidentified historic property be affected by the undertaking or new impacts be proposed that would affect identified properties, FHWA will ensure that reasonable efforts are made to avoid, minimize or mitigate adverse effects, pursuant to 36 C.F.R. § 800 and as outlined in PA Section VII. A–G.

FHWA and KABATA will notify consulting parties of any emergency or hazardous condition that may threaten or is caused by the location of a historic property. Any measures taken to respond to the emergency or hazardous condition will be coordinated with consulting parties. Procedures regarding this process are outlined in PA Section VIII. A–C.

Status reports, reviews of the effectiveness of the PA, traffic impacts, site visits, and document reviews will be conducted in accordance with PA Section IX. A–E. FHWA and KABATA will provide status reports to PA signatories every 6 months through the completion of Phase 1 or for the first 5 years after publication of the ROD, whichever occurs first. The KABATA liaison will

convene an annual meeting to update all consulting parties and offer a forum for discussion of any issues. At completion of Phase 1, the KABATA liaison and signatories will review the effectiveness of the PA Stipulations II–IV. FHWA will evaluate whether there are any unanticipated traffic impacts on identified historic properties in the vicinity of the A-C Couplet 1 year prior to construction of Phase 2. Site visits will be conducted by FHWA and consulting parties, and KABATA will post plans, specifications, reports, and other documents to be reviewed under the terms of the PA on the KABATA website.

Objections to reports or documentation by any signatory, invited signatory, or concurring party to the PA will be conducted according to PA Section X. A–C. FHWA will consult as needed to resolve any objections.

FHWA and KABATA will ensure ongoing public participation for Section 106-related activities pending completion of Phase 1 and Phase 2. PA-related reports, plans, and documents, with the exception of sensitive cultural resources information, will be made available to the general public. Timely objections related to historic preservation or the terms of the PA shall be considered by FHWA and KABATA in consultation with consulting parties, and a response will be provided. See PA Section XI.

Table 2 outlines the history of consultation and activities undertaken to reach the agreements described above.

Table 2 Section 106 activities, October 2008 through January 2010

Consulting party	Date	Meeting/ activity summary
Municipality of Anchorage	January 14, 2010	<ul style="list-style-type: none"> Signed MOU
	September 11, 2009	<ul style="list-style-type: none"> MOU Scope of Work Payment schedule
	June 2, 2009	<ul style="list-style-type: none"> Review of FHWA comments Discussion of signature process
	March 26, 2009	<ul style="list-style-type: none"> Review Programmatic Agreement Purpose of MOU Logistics for MOU
Matanuska-Susitna Borough (MSB)	September 18, 2009	<ul style="list-style-type: none"> Revision of Section V funding payments
	September 11, 2009	<ul style="list-style-type: none"> MOU Scope of Work Payment schedule Coordination with NVE and KTC Joint meeting with Tribes
	July 1, 2009	<ul style="list-style-type: none"> Signed MOU
	June 23, 2009	<ul style="list-style-type: none"> Comments and supporting budget
	June 4, 2009	<ul style="list-style-type: none"> Review FHWA comments Signature process
	March 31, 2009	<ul style="list-style-type: none"> Review Programmatic Agreement
	October 24, 2008	<ul style="list-style-type: none"> Letter from MSB to FHWA stating it will not sign PA
SHPO	July 28, 2009	<ul style="list-style-type: none"> Signed MOU
Knik Tribal Council (KTC)	September 11, 2009	<ul style="list-style-type: none"> MOU scope of work Payment schedule Coordination with MSB and NVE Joint meeting with MSB and NVE
	July 1, 2009	<ul style="list-style-type: none"> Signed MOU
	June 25, 2009	<ul style="list-style-type: none"> Review PA and MOU development Review FHWA comments Signature process
	April 1, 2009	<ul style="list-style-type: none"> MOU and scope of work development
	March 09, 2009	<ul style="list-style-type: none"> Final PA transmitted

(continued on next page)

Table 2 Section 106 activities, October 2008 through January 2010 (*continued*)

Consulting party	Date	Meeting/ activity summary
Native Village of Eklutna (NVE)	September 11, 2009	<ul style="list-style-type: none"> • MOU scope of work • Payment schedule • Coordination with MSB and KTC • Joint meeting with MSB and KTC
	July 1, 2009	<ul style="list-style-type: none"> • Signed MOU
	June 2009	<ul style="list-style-type: none"> • Review PA and MOU development • Review FHWA comments
	April 2009	<ul style="list-style-type: none"> • MOU and scope of work
	March 09, 2009	<ul style="list-style-type: none"> • Final PA transmitted

Readers' Note: The first annual meeting of the MOU signatories was held May 25, 2010, reporting the beginning of field work in compliance with the PA.

VI. EIS Measures to Minimize Harm

The following items are KABATA's and FHWA's commitments to mitigate impacts that will result from construction of the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot-bridge length, and cut-and-cover tunnel under Erickson Street). All practicable measures to minimize environmental harm have been incorporated into this decision. KABATA and FHWA are responsible for ensuring implementation of the measures described below as required by 23 CFR 771.109 and which can be found in greater detail in Chapter 4 of the *Final EIS*.

A. Mitigation Measures for Land Use and Ownership Changes

1. To mitigate indirect and cumulative impacts, FHWA and KABATA have agreed to help fund a new staff position in the Mat-Su Borough for up to \$100,000 per year for 2 years. The employee in this position will help develop a consolidated permitting process (“one-stop shopping”) and facilitate appropriate land use, development, and environmental planning efforts in the Borough associated with projected economic and population growth.
2. In addition, FHWA and KABATA will help fund up to \$70,000 to be used by the Mat-Su Borough for other priority work identified by the Mat-Su Borough and other agencies to facilitate orderly land use planning and economic development.

B. Mitigation Measures for Neighborhoods, Community Cohesion, and Environmental Justice Impacts

FHWA proposes mitigation measures to address the impacts of implementation of the Selected Alternative through Government Hill. Resolution of Section 106 issues following approval of the *Final EIS* resulted in advancing CSS mitigation measures and development of a Neighborhood Plan for the Government Hill neighborhood (see the signed Programmatic Agreement in Appendix B). CSS measures to consider during design could include cut-and-cover tunnel lid treatments, landscaping, retaining wall treatments, visual barrier/sound walls, bridge structure and

railing treatments, signage, pedestrian connections, and lighting. *Final EIS* CSS commitments for the Government Hill neighborhood are:

1. A cut-and-cover tunnel will be designed and built to convey all through-traffic below Erickson Street in the Government Hill neighborhood.
2. Best management practices (BMPs) will be undertaken to minimize fugitive light emissions and noise pollution during construction.
3. During construction, safe access to schools will be maintained for neighborhood children.
4. Architectural details including vegetation, lighting, and signs will be designed to maintain the appearance of the neighborhood to the most practicable extent.
5. Adversely affected and appropriately qualified property owners will be assured of fair compensation, as provided by the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and the Alaska Relocation Assistance and Real Property Acquisition Practices, AS 34.60.010 et seq.

C. Mitigation Measures for Transportation Impacts

Vehicles

1. A Traffic Management Plan that outlines specific alternatives for routing construction traffic to minimize temporary impacts of traffic on congested routes and intersections will be developed prior to construction. The Traffic Management Plan will, to the most practicable extent:
 - Minimize construction-related motorist delays, queuing, and accidents through effective application of traditional traffic-handling practices and through innovative approaches.
 - Relieve congestion and maintain traffic flow on detour routes and surrounding roadways.
 - Evaluate traffic mitigation strategies for the duration of construction, address lane closure requirements, and provide information to motorists and other members of the public.
 - Implement traffic management strategies that will include a public awareness campaign, traffic systems and signs, and traffic support and safety elements.
 - Require that neighborhood and business-owner meetings be held to discuss traffic routing options to help minimize and avoid construction-related traffic impacts.
2. KABATA will continue to coordinate with the Alaska Department of Transportation and Public Facilities (ADOT&PF) Central Region and local governments during future project stages to schedule roadway improvements and connections as part of systemwide improvements to the NHS.

Marine

Mitigation measures for construction impacts related to navigation and safety will be developed as part of the U.S. Coast Guard (USCG) permitting process and coordinated with the POA and Port MacKenzie.

Rail

1. Mitigation measures for construction impacts on the ARRC operations will be developed in cooperation with ARRC prior to construction. Mitigation measures will be incorporated into the construction contract specifications.
2. A preliminary bridge design (viaduct) has been proposed across the Ship Creek rail yard as part of the proposed connection to the Ingra-Gambell Couplet in Phase 2. KABATA will continue to coordinate with ARRC during future project phases to avoid or minimize adverse impacts on ARRC/Ship Creek Industrial Area facilities and operations.

Air Transportation

1. Mitigation measures for construction impacts on Elmendorf will be developed prior to construction that would directly affect Elmendorf's air operations and will be incorporated into the construction contract specifications.
2. Construction operations in the vicinity of Elmendorf will conform to Federal Aviation Administration (FAA) regulations and advisory circulars and will be coordinated with Elmendorf.
3. Notices to air traffic controllers and proper lighting and marking of construction equipment will be used to minimize risk to aircraft.
4. Lighting on the KAC project in the vicinity of Elmendorf will conform to FAA regulations and advisory circulars and will be coordinated with Elmendorf officials during the project design stage to ensure compatibility of lighting systems with aircraft operation.

Transit

During construction, safe pedestrian routes through the construction zone to transit stops will be provided.

Pedestrians and Bicyclists

KABATA will continue to coordinate with the ADOT&PF Central Region, the Mat-Su, Anchorage, and AMATS for future pedestrian and bicycle facility improvements and connections.

D. Mitigation Measures for Impacts on Population and Social Groups

Property owners will be assured of fair compensation, as required by and in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and the Alaska Relocation Assistance and Real Property Acquisition Practices, AS 34.60.010 et seq.

E. Mitigation Measures for Subsistence Impacts

See Mitigation Section V. Fish and Essential Fish Habitat, below.

F. Mitigation Measures for Impacts on Utilities

Relocation of utilities will be conducted in cooperation with the MOA, the Mat-Su Borough, Anchorage Water and Wastewater Utility, ENSTAR Natural Gas Company, Chugach Electrical Association, Matanuska Electric Association, Anchorage Municipal Light & Power, major communications service providers, POA, ARRC, and Elmendorf.

G. Mitigation Measures for Relocation Impacts

Owners of property proposed for acquisition will be eligible for payments provided under the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and the Alaska Relocation Assistance and Real Property Acquisition Practices, AS 34.60.010 et seq. Individuals, families, and businesses displaced by the KAC project will be eligible for relocation advisory services and payments. Under this law, appropriately qualified property owners will be paid the fair market value of real property acquired for ROW or easements. Property affected by the KAC project will be appraised by an independent appraiser to determine fair market value, and owners will be offered compensation accordingly.

H. Mitigation Measures for Air Quality Impacts

1. Construction boundaries will be clearly marked to limit disturbance areas. To control fugitive dust emissions, the construction contractor shall implement best management practices (BMPs) such as watering disturbed soils and reseeding and revegetating as soon as practicable after completion of the particular slope or segment.
2. Operational conditions contained within the AMATS 2025 *Long-Range Transportation Plan* for the KAC project include the following: KABATA will fund the installation and operation of an air quality monitoring site to assess impacts in the vicinity of the point where the Knik Arm Bridge traffic will combine with other A-C Couplet traffic in Downtown Anchorage. The monitoring project will begin 1 year in advance of the bridge completion and continue for 1 year after construction to assess before-and after-conditions for air pollutants of coarse and fine particulate matter and carbon monoxide.
3. During project construction, the air pollutant of greatest concern will be particulate matter, primarily because of fugitive dust emissions associated with earthmoving activities and construction equipment traveling over unpaved areas. These emissions will be controlled, as needed, through application of water or chemical dust suppressants.
4. The construction contract will require topsoil and seeding as soon as all disturbances to slopes have been completed. However, if needed, measures such as watering or placement of a dust palliative will be implemented to control fugitive dust at construction sites.

I. Mitigation Measures for Impacts on Noise Levels

KABATA will minimize construction noise levels to the extent that it is reasonable and practicable. Table 3-18 in the *Final EIS* lists the land activity categories included in the FHWA-established Noise Abatement Criteria (NAC) and the sound level (occurring over a 1-hour period,

or Leq[h]) that triggers noise abatement considerations for that land use category. The Alaska Department of Transportation and Public Facilities (ADOT&PF) Noise Abatement Policy states that a noise level of 65 dBA approaches the NAC (for category B) and that a 10 dBA increase from existing noise levels is a substantial increase.

Based on the noise analysis, noise mitigation will not be warranted for any of the receivers in the Study Area. To facilitate noise-compatible land use planning for future development in the Mat-Su, separate calculations were conducted and expressed as a distance from the centerline to the point at which traffic noise impacts are expected to occur at residential land uses (the traffic noise contour distance). Modeled results indicated that traffic noise impacts are predicted to occur within 200 feet of the centerline of the ROW. Therefore, any future residential land uses immediately adjacent to the ROW could be adversely affected by traffic noise. More noise-compatible uses, such as commercial or retail activities, will not be affected at this distance. For areas where the ROW will be wider than 400 feet, no traffic noise impacts are predicted at the ROW boundary.

Having updated, well-maintained equipment, effective muffler systems, insulated housings for generator motors, and a keen understanding of the daily work location when scheduling operations will substantially reduce construction noise impacts. If necessary, for those sensitive areas in Anchorage, the builder will be required to obtain a noise ordinance permit for any evening or early morning operations; this may restrict such operations to the hours of 6:00 A.M. to 10:00 P.M. In the Mat-Su, the contractor will use due care in night hauling and will otherwise schedule operations during normal daytime hours.

See Section VI. X, *Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)* and Z, *Mitigation Measures for Impacts on Threatened or Endangered Species*, below and Appendix C for discussions regarding the effects of construction noise on marine mammals.

J. Mitigation Measures for Geology/Soils/Seismic Impacts

Seismic risk will be minimized by adherence to Alaska-specific and national design codes. Detailed geotechnical investigations will continue during the design stage.

K. Mitigation Measures for Impacts Relating to Hazardous Materials and Contaminated Sites

1. Contaminated sites on Elmendorf were avoided during preliminary engineering by proposing that the roadway be constructed away from the bluff and out onto the beach.
2. Unexploded ordnances (UXO) will present a risk to construction crews. To mitigate this risk and to ensure worker safety, KABATA will retain UXO clearance personnel to clear the construction corridor prior to intrusive work in the area.
3. A Preliminary Site Investigation (PSI) in the form of a UXO clearance assessment, management plan, and coordination with USACE prior to ROW acquisition or construction will occur.

4. KABATA will complete a UXO construction contingency management plan. The plan will describe procedures for dealing with any UXO encountered during construction activities.
5. Known contaminated sites will be further evaluated during Phase II site assessments.
6. Hazardous materials used during project construction will be stored and handled according to State and federal regulations. The contractor will follow Sections 641-2.02 and 2.03 (Hazardous Material Control Plan [HMCP] Requirements and Spill Prevention, Control and Countermeasure [SPCC] Plan Requirements) in *Alaska Department of Transportation and Public Facilities Standard Specifications for Highway Construction*. These formal submittals (when approved by the State Engineer) 1) specify the contractor's detailed responsibilities for preventing pollution stemming from the use, containment, cleanup, and disposal of hazardous material, including petroleum products generated by construction activities and equipment; and 2) detail the contractor's planned use of oil spill prevention and control measures.

L. Mitigation Measures for Ground Water Impacts

See Section P, *Water Bodies* (lakes, streams, ponds) and *Water Quality*, below.

M. Mitigation Measures for Impacts on Archaeology and Historic Preservation

A PA has been developed with identified consulting parties, including the ACHP, Elmendorf, SHPO, Knik Tribal Council, the Native Village of Eklutna, the Matanuska-Susitna Borough, and the MOA to outline measures for the mitigation of adverse effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act. See *Section 4(f) Mitigation and Commitments* in the previous section, and see the signed Programmatic Agreement and separate MOUs in Appendix B (Section II. A–K).

N. Mitigation Measures for Impacts on Recreational Resources, Parks, and Wildlife Refuges

FHWA has provided the MOA alternative measures to mitigate impacts on Sunset Park and Harvard Park. Refer to *Section 4(f) Mitigation and Commitments* in the previous section for details.

O. Mitigation Measures for Impacts on Section 4(f) Resources

See *Section 4(f) Mitigation and Commitments* in Section IV.

P. Mitigation Measures for Impacts on Surface Water Resources and on Water Quality

1. All roads will be designed to maintain existing surface watercourses and will incorporate grass-lined ditches and swales as appropriate. During final design, KABATA and FHWA will work with the design contractor to ensure roadway runoff from stormwater or snowmelt will be filtered through roadside wetlands before reaching streams, lakes, or Knik Arm.

2. Properly sized and designed culverts will be used in appropriate locations to maintain the natural flow patterns of surface water to ensure that timing and inflows to adjacent wetlands and waters will be maintained.
3. In areas where curb-and-gutter storm drains will be required, enclosed collection systems will be incorporated to minimize the impacts of runoff.
4. Contaminant-free embankment and surface materials will be used in construction.
5. KABATA or its contractors will develop an Erosion and Sediment Control Plan (ESCP) to meet Alaska Department of Environmental Conservation (ADEC) and USEPA requirements of the Clean Water Act. The ESCP will be prepared by a registered engineer and included in the contract plan set. The ESCP will become the basis of the USEPA Notice of Intent and the contractor's Stormwater Pollution Prevention Plan (SWPPP), which will be implemented during project construction to minimize soil disturbance. The ESCP will direct contractors to reduce construction impacts, particularly those impacts that would result in destabilization of adjacent slopes and siltation.
6. The contractor shall comply with USEPA's General Permit for Stormwater Discharges from Construction Activities, including preparing and implementing a detailed SWPPP. The SWPPP will be prepared by a registered engineer to direct the contractor's efforts to minimize construction impacts on water quality and it will be implemented and adjusted during project construction. The plan will describe BMPs developed in accordance with ADOT&PF's *Alaska Storm Water Pollution Prevention Plan Guide* and USEPA's *Stormwater Management for Construction Activities: Developing Pollution and Prevention Plans and Best Management Practices*.
7. Impacts on water quality will be minimized during construction through the use of the following BMPs that minimize erosion, temporary water quality impacts from construction activities, and the introduction of suspended sediment and siltation:
 - a. Place coarse rock rubble to stabilize toes of slopes at ponds and stream crossings to prevent the erosion of fine-grained material into adjacent waters and wetlands.
 - b. Construct roadside swales designed to detain surface water to allow sediment-laden water to clear before being discharged to adjacent wetlands and waters.
 - c. Construct furrow ditches, check dams, silt fences, and detention basins, as appropriate.
 - d. Clearly demarcate clearing limits prior to construction to ensure impacts are confined within the project footprint near water bodies and wetlands and within 20 feet of the footprint in other areas.
 - e. Perform regular visual inspections of all slopes to monitor for slope erosion.
 - f. Locate all fueling, and equipment-servicing operations at least 100 feet away from all streams and wetlands, except for Knik Arm in-water construction work.
 - g. Seed cut-and-fill slopes as soon as practicably possible with both fast-growing annual species (to establish a root mass) and with native species (for long-term growth and soil stabilization).

8. To minimize and prevent spills or leaks of hazardous materials during construction, standard spill-prevention measures will be implemented in accordance with the contractor's approved Spill Prevention, Control and Countermeasures Plan.
9. All construction fueling and servicing operations will be kept a minimum of 100 feet from wetlands and freshwater bodies, except for Knik Arm in-water construction work.
10. The drainage design of the road through Government Hill will incorporate all feasible measures to detain water on site or in other designated areas and to avoid direct routing of storm water to creeks.
11. The KAC project will use a clear-span structure to cross Ship Creek.
12. All required permits and agency approvals will be obtained prior to construction, and any permit stipulations will be incorporated into the construction contract specifications. All applicable state and federal permit conditions will be adhered to throughout the construction stage.
13. KABATA will hold meetings with the construction contractor and agencies to ensure implementation of mitigation commitments.

Q. Mitigation Measures for Impacts on Wetlands

In compliance with Section 404 of the Clean Water Act, the following actions will be taken to avoid and minimize potential impacts on wetlands in the project corridor:

1. Design the project to avoid impacts.

The preliminary design of the KAC project largely avoids impacts on wetlands because:

- The preliminary alignments have been adjusted several times over the course of environmental and preliminary engineering studies to avoid impacts on wetlands. During final design of the Selected Alternative, KABATA and FHWA will investigate additional measures to reduce impacts, including additional small alignment changes and changes to reduce the roadway footprint in wetlands and other sensitive areas (such as using steep slopes and reduced embankment heights).
- The current Point MacKenzie Road alignment was utilized as much as possible for the Northern Access Alternative preliminary design to take advantage of the previously disturbed wetlands along the existing corridor of the Point MacKenzie Road, while meeting NHS road geometry requirements. Any alignment crossings of wetlands were unavoidable.
- The 3.5-mile section of new road in the Port MacKenzie Use District will be constructed in uplands; all wetlands were avoided during road design and alignment optimization.
- The Phase 2 viaduct to Ingra-Gambell Couplet will cross Ship Creek, a stream that supports anadromous fish. The viaduct has been designed as a pier-supported bridge with spans of sufficient length to avoid placement of piers in the floodway. The viaduct has also been located to avoid impacts on Ship Creek riparian wetlands.

- The Selected Crossing Alternative was chosen over two other Crossing corridors because it will have fewer impacts on intertidal habitat, have a smaller approach footprint, and be a greater distance from beluga use areas near Sixmile Creek.
 - Multiple bridge abutment and approach side-slope configurations were investigated during preliminary design to identify designs that would minimize impacts on fish habitat and movement. Reducing the side slope from an industry standard of 4:1 to 2:1 decreased the project footprint in the intertidal zone by approximately 3 acres. Numerous voids in the rock armor surface will have the potential to provide refuge from predation and tidal currents for juvenile salmon.
2. Incorporate measures to minimize adverse impacts into the preliminary design of the KAC project:
 - Properly sized and designed culverts will be used in appropriate locations to maintain the natural flow patterns and timing of surface water inflows to adjacent wetlands and waters.
 - Slope limits in wetland areas will be separately identified during construction to ensure workers are aware of wetlands and the need to avoid impacts beyond the slope and clearing limits. The planned outside limits of disturbance will be staked prior to construction to ensure that impacts are limited to that area.
 - Grubbing will not be conducted in wetlands outside of the fill footprint and only the minimum clearing required for safety will be conducted beyond the toe of all slopes.
 - Section P describes impact minimization for water bodies, which will also minimize potential adverse impacts on wetlands.
 3. Restore sites that must be temporarily affected by the project:

To protect hydrologic and water quality functions that will be temporarily disturbed, but not destroyed by implementation of the KAC project, affected wetland areas will be recontoured and revegetated with plant species indigenous to the Cook Inlet area.
 4. Compensate for unavoidable impacts through preservation, restoration, or creation of wetlands:
 - KABATA will provide compensatory mitigation for the project's unavoidable direct impacts on wetlands.
 - KABATA will work with USACE and resource agencies to develop a compensatory mitigation plan to offset impacts through one or more of the following: restoration of degraded wetlands and streams, preservation of wetlands through purchase and conservation easement, purchasing credits from mitigation banks, and/or payment to an in-lieu fee program.
 - KABATA will obtain all required permits and agency approvals prior to construction, and any permit stipulations will be incorporated into the contract specifications.

R. Mitigation Measures for Impacts on the Coastal Zone

1. The KAC project will include construction in Alaska's coastal zone and will be consistent with the Alaska Coastal Management Program (ACMP) and the Coastal Management

Plans of the MOA and the Mat-Su Borough. Mitigation measures will be further developed during the permitting phase.

S. Mitigation Measures for Impacts on Marine Habitat

See Section V, Essential Fish Habitat, below.

T. Mitigation Measures for Impacts on Freshwater Habitat

See Section P, Water Bodies (lakes, streams, ponds), and Water Quality, above.

U. Mitigation Measures for Impacts on Terrestrial Habitat

To protect the integrity of natural plant communities and to prevent introduction of invasive species, the following BMPs will be incorporated into construction activities:

1. Removal or disturbance of roadside vegetation will be minimized during construction.
2. Contact with roadside sources of weed seed that could be transported to other areas will be minimized.
3. Only certified weed-free straw and mulch or weed-free fiber roll barriers or sediment logs will be used as part of the BMPs employed for erosion control.
4. Project-related revegetation will use only plant species native to Southcentral Alaska, except that noninvasive annual grasses may be used to provide initial soil cover; only seed meeting certified standards pursuant to 11 Alaska Administrative Code (AAC) 34.075 will be used.
5. Final project design will minimize direct impacts on vegetation by defining narrow clearing limits (except in areas of known high-moose traffic) and using already disturbed areas when possible.

V. Mitigation Measures for Impacts on Essential Fish Habitat (Anadromous Fish, Marine Fish, Freshwater Fish)

Based on extensive agency consultation that occurred during 2005 and 2006 as documented in the Draft EIS and Final EIS, FHWA and KABATA will employ the following conservation and mitigation measures to avoid, minimize, and mitigate adverse impacts on EFH:

1. Initial fill for intertidal roadway and bridge approach construction activities will be placed when the construction area is exposed during low tide to reduce the risk of directly covering fish during the months of April through August and to minimize the amount of fill lost to tidal erosion. Intertidal construction techniques that help minimize fish entrapment and loss of fill to tidal erosion will be employed.
2. Any in-water filling in the subtidal areas during the months of April through August will be accomplished only within 3 hours before and after low tide—when volumes and currents will be lowest—to reduce the risk of directly covering fish and to minimize the amount of loss of fill because of erosion. To the extent practicable, filling in the subtidal

areas will be accomplished during the months of September through March, when juvenile and adult salmon will be less likely to be present.

3. Temporary pile-driving noise will be minimized by using a vibratory hammer to drive piles to the maximum extent possible before switching to an impact hammer.
4. A “soft start” technique will be used at the beginning of each pile-driving installation to allow anadromous fish in the area to leave before impact pile driving reaches full energy.
5. The use of BMPs that minimize dust, erosion, and sediment runoff will mitigate any temporary, adverse, water-quality construction-related impacts on freshwater EFH. The contractor shall be responsible for developing an SWPPP to meet ADEC and USEPA requirements under the federal Clean Water Act.
6. KABATA will follow the evolution of sound attenuation technologies and will evaluate the suitability of future technologies for applicability during the construction stage of the project.
7. KABATA proposes to compensate the loss of EFH associated with infilling intertidal and subtidal areas by including them as part of an overall compensatory mitigation plan for wetlands and waterbodies. The majority of the aquatic portion of the KAC project is located in Knik Arm, which is largely undeveloped and does not contain substantial areas of degraded intertidal or subtidal habitat for on-site or off-site in-kind restoration. Therefore, it is not practicable to offset impacts on these habitats through restorative mitigation. KABATA will work with USACE and resource agencies to determine the appropriate mitigation based on the final design.
8. Construction runoff will be intercepted to prevent direct discharge to Ship Creek, and the drainage system of the completed Anchorage approach will be designed to prevent direct discharge of stormwater runoff to the creek.

FHWA and KABATA are committed to continued coordination with NMFS as the design phase of the project is developed and more information becomes available to evaluate these conservation and mitigation measures to avoid, minimize, and mitigate adverse impacts on EFH.

W. Mitigation Measures for Impacts on Birds (Freshwater Birds, Terrestrial Birds, Marine Birds, Shore Birds, Bald Eagles, other Marine Bird Species)

Eagles

1. Bald eagles (*Haliaeetus leucocephalus*) were removed from the endangered species list in June 2007 because their populations recovered sufficiently.* Bald and golden eagles (*Aquila chrysaetos*) were not listed as an endangered or threatened species in Alaska. However, in connection with the delisting in the Lower 48 states, USFWS announced the final rule on two new permit regulations that would allow for the take of eagles and eagle nests under the Bald and Golden Eagle Protection Act (Act). The final rule was published in the *Federal Register* on September 11, 2009. The bald eagle permit program will authorize limited, nonpurposeful take of bald eagles and golden eagles; authorizing individuals, companies, government agencies (including tribal governments), and other

* 72 *Federal Register* (FR) 37346 at 37372

organizations to disturb or otherwise take eagles in the course of conducting lawful activities such as operating utilities and airports. Most permits issued under the new regulations would authorize disturbance. In limited cases, a permit may authorize the physical take of eagles, but only if every precaution is taken to avoid physical take. Removal of eagle nests would usually be allowed only when it is necessary to protect human safety or the eagles. In addition, the new permit regulations require a permit for disturbance to bald eagle foraging or roosting sites. A survey will be required to determine whether any established foraging or roosting sites occur in the KAC project area because this was not required previously under the Act.

Bald and golden eagles are still protected under the Act and under the Migratory Bird Treaty Act (MBTA). USFWS has developed measures or guidance to ensure that construction actions are consistent with the Act and the MBTA. The National Bald Eagle Management Guidelines, dated May 2007, contain the most recent recommendations for avoidance and will be adhered to even if a permit authorization is necessary. FHWA and KABATA will consult Elmendorf—where the known nest is located—and USFWS prior to construction and update surveys to determine the current status of the nest (i.e., whether it is still active, whether there are any additional nests in the project area that may be adversely affected). The only other new requirement from the permit program is post-activity monitoring. Depending on the magnitude of the anticipated disturbance, FHWA and KABATA may be required to provide basic post-activity monitoring by determining whether the nest site, communal roost, or important foraging area continues to be used by eagles for up to 3 years following completion of the activity for which the permit was issued. FHWA and KABATA will continue coordination with USFWS on the existing bald eagle nest sites in the Study Area. KABATA will begin monitoring the bald eagle nest sites 1 year prior to construction commencement to verify the status and condition of the nest sites and confirm appropriate authorization requirements.

The following measures are bald eagle commitments listed in the *Final EIS* and will be updated accordingly, based on the discussion above.

2. Detailed mitigation measures will be developed during the design and permitting phase of the project to minimize impact on bald eagles nesting near Cairn Point, and to ensure compliance with the Bald and Golden Eagle Protection Act.
3. Mitigation measures for construction of the project will be incorporated into the construction contract specifications, and any mitigation measures for operation of the project, if applicable, will be implemented as required.
4. The following conservation measures, some of which are based on the National Bald Eagle Management Guidelines, are currently proposed to avoid, minimize, and mitigate adverse impacts on bald eagles. These are general measures that will be modified to specifically address details of the Selected Alternative through further coordination with USFWS during design and permitting:
 - Prior to construction, a survey will be conducted to reassess the activity of the nests in the Study Area and to determine whether other nests have been constructed in the Study Area.

- Construction activities adjacent to the single known nest near Cairn Point will occur, to the greatest extent practicable, only during October through February, when eagles will not be nesting.
- If determined necessary, FHWA, KABATA, Elmendorf, and USFWS will assess the risk for tree blow-down with the single known nest tree and adjacent trees.
- FHWA and KABATA will work with USFWS to develop a detailed nest monitoring plan to detect disturbance from construction and temporary pile-driving activities.
- Nest monitors will be formally educated in the biological sciences and experienced in recognizing bald eagle behavioral patterns and any changes to those patterns; these monitors will have the ability to record such data in a scientific manner.
- If obvious disturbance is observed, construction will cease until a further evaluation can be conducted to determine appropriate and necessary measures.

Migratory birds

Clearing of vegetation on lands for project-related development will occur before or after the nesting season (from May 1 to July 15 in Southcentral Alaska) to meet the requirements of the Migratory Bird Treaty Act.

X. Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)

As discussed below in Section VI. Z, *Mitigation Measures for Impacts on Threatened or Endangered Species*, FHWA and KABATA have worked extensively in consultation with the National Marine Fisheries Service (NMFS) in compliance with the Marine Mammal Protection Act of 1972 (MMPA) and Endangered Species Act (ESA), as amended, to address impacts to the Cook Inlet beluga whale that could be caused by KAC construction and operation. Specifically, extensive efforts have been made to develop measures to avoid, minimize, and mitigate impacts on the Cook Inlet beluga whale. See Section VI.Z below for a detailed discussion of mitigation measures to protect the beluga whale.

Y. Terrestrial Wildlife/Mammals Mitigation Measures

Mitigation measures to avoid and minimize moose-vehicle accidents on Point MacKenzie Road during Phase 1 could include:

1. Installation of warning signs along Point MacKenzie Road to alert motorists of frequent moose crossings.
2. Vegetation removal:
 - Reseed disturbed ROW with low-growing native grasses to discourage the growth of moose browse species such as alder and willow.
 - Develop a regular, 50-foot-wide ROW clearing program to remove woody vegetation that might provide moose browse along the ROW.
3. An Adaptive Management Plan will be developed in consultation with resource agencies to determine appropriate terrestrial mammal monitoring and mitigation activities.

4. Additional studies may be initiated during Phase 1 of the project to assess habitat use and travel corridors. Results of these studies will be used to determine the appropriate phasing and scale of mitigation for Phase 2.

Z. Mitigation Measures for Impacts on Threatened or Endangered Species

In accordance with the ESA and with concurrence from both USFWS and NMFS, no species listed as threatened or endangered inhabited the project area as of FHWA approval of the *Final EIS* on December 20, 2007. On October 22, 2008, NMFS published the final determination^{*} to list the distinct population segment (DPS) of the beluga whale found in Cook Inlet. On April 14, 2009, NMFS released an advance notice of proposed rulemaking to identify issues to consider and evaluate when designating Critical Habitat for Cook Inlet beluga whales.[†] Critical Habitat was proposed by NMFS on December 2, 2009.[‡] Proposed Critical Habitat includes upper Cook Inlet from the upper end of Knik and Turnagain arms to an area south of Kalgin Island, Kachemak Bay, and nearshore areas extending from Tuxedni Bay to Kamishak Bay. Proposed Critical Habitat for the Cook Inlet beluga whale is present in the action area[§] for the KAC project.

In its proposed Critical Habitat ruling, NMFS identified five primary constituent elements (PCEs) that are essential to the conservation of Cook Inlet beluga whales. All five are present in the KAC action area.

- **PCE 1** – Intertidal and subtidal water of Cook Inlet with depths <30 feet (mean lower low water mark [MLLW]) and within 5 miles of high- and medium-flow accumulation anadromous fish streams
- **PCE 2** – Primary prey species consisting of four species of Pacific salmon (Chinook, sockeye [*Oncorhynchus nerka*], chum [*O. keta*], and coho), eulachon, Pacific cod (*Gadus macrocephalus*), walleye pollock (*Theragra chalcogramma*), saffron cod (*Eleginus gracilis*), and yellowfin sole (*Limanda aspera*)
- **PCE 3** – The absence of toxins or other agents of a type or amount harmful to beluga whales
- **PCE 4** – Unrestricted passage within or between the Critical Habitat areas
- **PCE 5** – Absence of in-water noise at levels resulting in the abandonment of habitat by Cook Inlet beluga whales

Discussions with NMFS with regard to beluga whales have been underway since before the Cook Inlet beluga whale was listed under the ESA in October 2008. This early agency involvement was a result of beluga whale protection under the MMPA and project development through the NEPA process. In accordance with FHWA regulation 23 C.F.R. § 771.111(d), in a letter dated January 10, 2005, NMFS was invited to serve as a cooperating agency for the KAC project. In an e-mail sent on August 16, 2005, NMFS confirmed that the agency would be a cooperating agency for

^{*} 73 FR 205

[†] 74 FR 17131

[‡] 74 FR 63080

[§] An action area includes all areas that will be directly or indirectly affected by a federal action, not merely the immediate area involved in the action. Such delineation provides a geographic limit for addressing the likely effects of a project on any listed species and its habitat.

preparation of the EIS. For over 5 years, FHWA and KABATA have been proactive in communicating project goals with NMFS and addressing its concerns to minimize effects of the project on beluga whales.

In May 2006, KABATA requested a multiyear Letter of Authorization (LOA) from NMFS pursuant to Section 101(a)(5) of the MMPA, 16 United States Code (U.S.C.) § 1371.101(a)(5); and 50 C.F.R. § 216, Subpart I, to authorize incidental harassment (“taking”) of marine mammals, primarily the Cook Inlet beluga whale, as a result of construction of the KAC project. This request was withdrawn in March 2009 following the ESA listing of the Cook Inlet population of beluga whale in October 2008.* NMFS determined at that time that the requested takes of beluga whales were too high and further analysis was needed. From March 2009 until January 2010, FHWA and KABATA conducted additional engineering analyses and further evaluated mitigation measures, in coordination with NMFS, to reduce potential impacts on the beluga whale. As a result, a new LOA under the MMPA was prepared and submitted to NMFS on August 20, 2010, to reduce the number of requested takes. The LOA contains commitments to implement measures to avoid, minimize, and mitigate potential impacts on the beluga whale associated with construction noise. The conclusion of the LOA request from NMFS for the beluga whale will provide the basis for the Incidental Take Statement for the Biological Opinion under the ESA formal Section 7 Consultation process (see Appendix C).

Table 3 provides a chronological summary of meetings and other major communications between FHWA/KABATA and NMFS regarding anticipated project effects on beluga whales during development of the EIS and following approval of the *Final EIS*. In response to NMFS’s concerns about potential project impacts on beluga whales, FHWA and KABATA produced two white papers with the following specific purposes:

- *Constraints Affecting the Location of the Knik Arm Crossing Project.* This white paper addressed concerns regarding how FHWA selected the location for a bridge crossing Knik Arm. It also clarified how the results of studies of beluga whale habitat use in Knik Arm conducted by KABATA and the POA were used in the selection process for the bridge location.
- *A Review of Beluga Whale Behavior and Response to In-Water Structures.* This white paper addressed concerns regarding how beluga whales might respond to in-water and over-water components of a bridge crossing Knik Arm based on a review of available relevant literature and first-hand observer accounts. It also addressed concerns that the project might cause beluga whales to avoid habitat in upper Knik Arm.

* 73 FR 62919

Table 3 Summary of FHWA^a/KABATA^b correspondence with NMFS^c

Date	Correspondence type	Topic discussed
<i>Environmental Impact Statement Scoping</i>		
7-7-04	Meeting	Discussion of NMFS's concerns and their request for studies on belugas
7-15-04	Letter from KABATA	Transmittal of beluga whale study plan to NMFS
11-2-04	Meeting	Discussion of progress with beluga whale observational studies
1-10-05	Letter from FHWA	Invitation for NMFS to participate as cooperating agency under NEPA ^d
1-26-05	Interdisciplinary Team Meeting	Study "kick-off" – Partnering session; introduction to the EIS study and discussion of agency involvement
2-24-05	Meeting	"One-on-one" scoping meeting to provide a forum for NMFS to learn about the project, ask questions, and provide feedback
3-14-05	Telephone	Discussion of options for authorizing incidental take of beluga whales under MMPA ^e
3-29-05	Interdisciplinary Team Meeting	Discussion of EIS draft purpose and need, study constraints, and ongoing analyses; request for comments, suggestions, and observations on topics; study-related questions and answers
4-11-05	Letter from FHWA	Request under ESA ^f Section 7 ^g for concurrence on the determination of no effect on listed species, because no listed species occur in the project area
4-14-05	Meeting	Updates on the beluga observational studies; discussed the EFH ^h assessment and marine mammal incidental take under the MMPA
4-25-05	Interdisciplinary Team Meeting	Discussion of revised EIS purpose and need, indirect and cumulative effects methodologies, land use modeling, natural environment and resource components, and reasonably foreseeable future actions; completion of feedback forms measuring initial agreement with the approach for conducting the indirect and cumulative impact assessments
4-27-05	Letter from NMFS	Section 7 of the ESA satisfied (this was prior to the listing of Cook Inlet population of beluga whales). The letter specified that NMFS will initiate a formal review of the status of the Cook Inlet beluga whale stock under the ESA.
5-11-05	Interdisciplinary Team Meeting	Discussion of Crossing concepts, including modes and types, and the alternatives screening criteria; discussion of the agency comments and suggestions for the purpose and need statement and the indirect and cumulative impacts methodologies; completion of feedback forms measuring initial acceptance of the screening criteria to determine reasonableness and the scope of study concepts, as well as whether concepts were adequately assessed for reasonableness
5-11-05	Letter from NMFS	Scoping comments, including request for detailed analysis of effects on beluga whales in the <i>Draft EIS</i> ⁱ
7-11-05	Meeting	Updates on the status of the fisheries and beluga whale studies for the KAC ^j project
7-14-05	Interdisciplinary Team Meeting	Discussion of agency comments received and responses; presentation of draft final purpose and need statement; summary and discussion of corridors under consideration; completion of feedback forms to determine initial agreement with the way comments have been addressed

(continued on next page)

Table 3 Summary of FHWA/KABATA correspondence with NMFS (*continued*)

Date	Correspondence type	Topic discussed
8-16-05	E-mail from NMFS	NMFS requested to become a cooperating agency under NEPA
8-19-05	Meeting	Discussion of bridge design/alignment and roadway embankment fill design with regard to beluga whale habitat
9-27-05	Interdisciplinary Team Meeting	Presentation of actions, alternatives, and impacts related to the proposed action; completion of feedback forms gauging initial acceptance of reasonable alternatives and important issues to be carried forward in the <i>Draft EIS</i>
11-21-05	Meeting	Discussion of mitigation for potential impacts on natural resources
12-14-05	Meeting	Discussion of general agency comments on preliminary <i>Draft EIS</i> , including concerns about beluga whale movements and hydrology
1-24-06	Letter from NMFS	Concern over lack of specific data and analysis in <i>Draft EIS</i> regarding sensitivity of beluga whales to pile driving, vessels, and other anthropogenic noise associated with bridge construction. Suggestions made for new data to be added to <i>Draft EIS</i> .
3-1-06	Telephone	Clarification of comments from NMFS regarding beluga whale behavior in letter dated 1-24-06
4-10-06	Telephone	Clarification of the subsistence harvest management for beluga whales in Cook Inlet
5-6-06	Letter from KABATA	Request for multiyear LOA ^k for incidental harassment of marine mammals
5-30-06	Letter from KABATA	KABATA response to consideration of the Cook Inlet population of beluga whales for ESA listing
9-6-06	Letter from KABATA	KABATA response to letter from NMFS dated 1-24-06
<i>Draft Environmental Impact Statement</i>		
9-12-06	Letter from KABATA	Notification of release of <i>Draft EIS</i>
10-12-06	Meeting	Project status updates, discussion of indirect and cumulative impacts, environmental management tracking system, preliminary <i>Draft EIS</i> comment response, and mitigation for project impacts
10-25-06	Meeting	Discussion of mitigation strategies and NMFS's comments on the <i>Draft EIS</i> and Ship Creek rehabilitation project
11-17-06	Fax/Letter from NMFS	Comments on the <i>Draft EIS</i>
<i>Final Environmental Impact Statement</i>		
4-26-07	Letter from KABATA	Request for an update on the status of the multiyear LOA
5-18-07	Meeting	Discussion of proposed listing status of the Cook Inlet population of beluga whale under the ESA in relation to the pending KAC <i>Final EIS</i> and conference proceedings under Section 7 of the ESA
7-3-07	Letter from FHWA	Response to NMFS's comments on <i>Draft EIS</i> to be incorporated into <i>Final EIS</i>
2-19-08	Letter from NMFS	Concern from NMFS regarding beluga whales, EFH, and marine and freshwater trust resources following its review of the <i>Final EIS</i>
12-18-08	Meeting	Discussion of LOA issues and Section 7 consultation for beluga whales

(continued on next page)

Table 3 Summary of FHWA/KABATA correspondence with NMFS (*continued*)

Date	Correspondence type	Topic discussed
Post-Final Environmental Impact Statement		
2-18-09	Meeting	Discussion of the effects of listing the Cook Inlet population of beluga whale under the ESA and MMPA and required steps for KAC project
3-12-09	Letter from KABATA	Withdrawal of request for the LOA and a request for help in developing a process providing protection for beluga whales
4-28-09	Meeting	KAC project status update and mitigation standards discussion to avoid and minimize project effects on beluga whale
5-18-09	Meeting	Discussion with local NMFS staff about white papers and progressing with the Section 7 consultation
5-20-09	Meeting	Discussion of a process to move forward with the Section 7 consultation
1-19-10	Meeting/Workshop	Presentation and collaboration on design modifications and enhanced avoidance/minimization measures to reduce takes of beluga whales during construction and operation of the KAC project; discussion of schedule for BA ^l and LOA submittal
5-20-10	Draft BA and draft LOA request transmitted from FHWA to NMFS, with cover letter from John Lohrey to Michael Payne	Draft BA and draft LOA request transmitted for NMFS's review and comment prior to Formal Consultation; comment due date of June 11, 2010
7-1-10	BA transmitted from FHWA to NMFS, with letter requesting Formal Section 7 consultation	
7-27-10	Received comments from NMFS on the draft LOA	Comments from Jaclyn Daly
8-4-10	Letter from James Balsiger (NMFS) acknowledging July 1, 2010, Section 7 consultation initiation	
8-25-10	KAC On-Site Executive Meeting	Executives from FHWA, NMFS, KABATA, and the Alaska Department of Transportation and Public Facilities met on site in Anchorage with the goals of jointly setting a target for delivery of a Biological Opinion (BO) under the ESA, conducting a discussion of relevant mitigation strategies, and finalizing the Record of Decision (ROD)
9-8 and 9-10	2-day Section 7 Consultation Workshop with NMFS	

^a the Federal Highway Administration^h essential fish habitat^b the Knik Arm Bridge and Toll Authority^c the National Marine Fisheries Service (National Oceanic and Atmospheric Administration [NOAA] Fisheries Service), a division of the U.S. Department of Commerceⁱ Environmental Impact Statement^d National Environmental Protection Act^j Knik Arm Crossing^e Marine Mammal Protection Act^k Letter of Authorization^f Endangered Species Act^l biological assessment^g Section 7 consultation refers to specific requirements and processes under the ESA for federal agency negotiation and resolution of issues associated with proposed projects or actions.

With the listing of the Cook Inlet beluga whale and proposed Critical Habitat under the ESA, FHWA and KABATA consulted with NMFS to develop a Biological Assessment (BA) to initiate formal Section 7 Consultation for the species and formal Conference for the proposed Critical Habitat. The BA examines the effects on the species and proposed Critical Habitat and contains project design elements and mitigation measures that are intended to avoid or minimize adverse effects. The BA was submitted to NMFS to initiate formal Section 7 Consultation and formal Conference on July 1, 2010.

In the BA, FHWA and KABATA recommend a “may affect—likely to adversely affect” determination for Cook Inlet beluga whale because:

- Beluga whales may enter the high-noise environment created by pile-driving noise during construction of the project. The anticipated impacts on beluga whales are expected to be limited to potential temporary changes in the behavior or distribution of individual belugas and the potential for a temporary loss of, or shift in, hearing sensitivity. Measures will be employed to avoid or minimize impacts, including but not limited to, monitoring for marine mammals (observers and passive acoustic devices with localization capabilities), employing soft-start techniques for pile driving, developing and implementing a shut-down plan, and avoiding impact and vibratory pile driving and removal of temporary piles from August 1 through November 30.
- Increased vessel traffic and the physical presence of active equipment during project construction may result in beluga whales temporarily avoiding habitats in the action area.

With exception of the effects listed above, all other effects considered from the KAC project were determined to be “insignificant” or “discountable” to Cook Inlet beluga whales.

In the BA, FHWA and KABATA determined that the project will “not destroy or adversely modify” proposed Cook Inlet beluga whale Critical Habitat.

Despite temporary impacts on two of the five proposed PCEs, project impacts on habitat will not appreciably diminish the value of the proposed Critical Habitat for conservation of the species because:

- Temporary increases in vessel traffic and the physical presence of active construction equipment in the action area during project construction may cause temporary and localized impacts on PCE 4 (unrestricted passage within or between Critical Habitat areas); because these effects will be temporary and localized, they will not alter the conservation role of this PCE for the species.
- The temporary increase in underwater noise during construction of the project will adversely affect PCE 5 (absence of in-water noise at levels resulting in the abandonment of habitat by Cook Inlet beluga whales); however, the conservation role of this PCE for the species will be maintained because these effects will be temporary and localized.
- The pending incidental take statement under the ESA relies on successful approval of the concurrent LOA for takes under the MMPA; FHWA and KABATA have committed to implement measures to avoid, minimize, and mitigate impacts associated with construction noise.
- Functions of any disturbed habitat will be maintained.

If Cook Inlet beluga whale Critical Habitat is designated prior to completion of the KAC project, a provisional effect determination for Critical Habitat is provided for in the BA. FHWA and KABATA recommend a provisional determination that the KAC project “may affect” and is “likely to adversely affect” proposed Cook Inlet beluga whale Critical Habitat. This determination is based on the localized and temporary effects on PCE 4 (impacts of increased vessel traffic and the physical presence of active construction equipment during project construction) and PCE 5 (impacts of in-water construction noise).

In response to the BA, NMFS issued a Biological Opinion (BO) for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 which states: *“NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat. ... Although we conclude the project is not likely to jeopardize the continued existence of this species, we remain concerned about the potential additive effects of development projects within the habitat of these endangered whales. Conservation recommendations are provided with the opinion which are intended to mitigate potential adverse effects, and we continue to encourage FHA to fully consider and exercise its responsibilities under section 7(a)(1) of the Act. Because critical habitat has not been designated for the Cook Inlet beluga whale, this document will be a conference opinion on the Knik Arm Crossing as it concerns proposed critical habitat. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales, NMFS will issue a letter confirming this conference opinion to be the biological opinion for this critical habitat (See Appendix C for the complete NMFS BO).*

In the BO, NMFS concurred with all of the mitigative measures identified in the FHWA BA, but clarified that: *“We note that some of the measures proposed by KABATA and FHA are not specific or do not include detailed descriptions. NMFS will coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective”*. FHWA and KABATA will implement the mitigation measures listed in the BO, which are:

- using drilled-shaft technology for the large-diameter, permanent bridge piers as opposed to driven piles originally proposed in the KAC EIS, significantly reducing in-water noise exposure
- increasing bridge span lengths from the 250-foot spans discussed in the KAC Draft EIS to 275-foot spans, reducing the number of bridge piers from 33 to 29
- scheduling temporary pile-construction activities when beluga whales are not in Knik Arm or the KAC project area in large numbers (specifically, between December 1 and July 31)
- implementing a soft-start application for initial pile-driving operations
- avoiding simultaneous installation and/or removal for moorage, dock, and template piles in different locations (Exception: Whenever beluga whales are not present in the project area and weather conditions are favorable, KABATA will however, coordinate with NMFS to determine whether pile driving at multiple locations would be acceptable to minimize the project's in-water duration of disturbance.)
- monitoring construction-related acoustics to determine appropriate safety zones around pile-driving activities

- implementing a multiple-observer monitoring program with mandatory shut-down procedures to avoid injury and minimize potential harassment to beluga whales
- implementing a construction contractor specification to maximize vessel-free beluga passage zones during construction
- implementing NMFS vessel operation guidelines to minimize construction vessel operation impacts
- implementing measures to protect water quality and flows in receiving waters
- focusing mitigation for fill impacts required for roadway approach construction to maximize fishery enhancements in Knik Arm
- preventing the construction of a boat launch ramp facility in association with the project so that no direct access to tidelands is provided
- developing an Adaptive Management Plan in close coordination with NMFS

NMFS also proposed four additional discretionary conservation recommendations to further avoid and minimize adverse effects:

1. “1. KABAT A should revise their crossing design to decrease the length of the eastern abutment fill by approximately 800 feet, or to Station 810+00 as depicted in the November 2009 Proof of Concept Geological Section. This action would reduce the loss of critical habitat and present fewer long-term impacts to beluga whales which utilize the near shore areas of Knik Arm along this shoreline.
2. KABATA or DOT should develop and implement a noise-reduction protocol for vessels. This plan should consider operational and engineering opportunities to reduce noise and may include such measures as using gaskets to isolate noise sources (e.g. engines, generators, winches), using moorings rather than propellers to maintain position, using non-powered barges and platforms in lieu of powered vessels, vessel speed limitations, access points, and travel corridors.
3. KABAT A or DOT should halt impact and vibratory pile driving during the month of May within two (2) hours either side of low tide to reduce the exposure of beluga whales to this noise source during the spring eulachon migration.
4. KABATA or DOT should develop a vessel operator beluga whale awareness briefing and operational practices to reduce the effects of construction vessels on these whales. KABATA and/or DOT should consult with NMFS to develop this program and information.”

As per NMFS recommendations cited above under mitigation measures to “... *coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective*”, FHWA and KABATA are committed to continued coordination with NMFS as the design phase of the project is developed and more information becomes available to evaluate these discretionary conservation recommendations in the attempt to further avoid and minimize adverse effects to the beluga whale.

AA. Mitigation Measures for Cumulative Effects

To minimize and mitigate potential growth effects, FHWA and KABATA have agreed to help fund a new staff position in the Mat-Su Borough to provide growth management assistance for up to \$100,000 per year for 2 years. This position will help develop a consolidated permitting process (“one-stop shopping”) and facilitate appropriate land use, development, and environmental planning efforts in the Borough that are associated with projected population growth and related economic growth. In addition, FHWA and KABATA will help fund up to \$70,000 to be used by the Mat-Su Borough for other priority work identified by the Mat-Su Borough and other agencies to facilitate orderly land use planning and economic development.

VII. Monitoring or Enforcement Programs

A summary of construction activity restrictions based on wildlife occurrences discussed in Section VI, above, is shown in Table 4.

Table 4 Summary of construction activity restrictions based on wildlife occurrences

Construction activity – target species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Approach roadways – fish Knik Arm intertidal fill				Intertidal fill restriction for April through August For approach roadway construction, if fill is placed in Knik Arm intertidal zone during this time period, fill can be placed only when the construction area is exposed during low tide to minimize covering of fish and fish entrapment during peak occurrence.								
Approach roadways – fish Knik Arm subtidal fill				Subtidal fill restriction for April through August For approach roadway construction, if fill is placed in Knik Arm subtidal zone during this time period, fill can be placed only from three hours before until three hours after low tide to minimize covering of fish and fish entrapment during peak occurrence.								
Temporary piles – belugas Knik Arm in-water impact and vibratory pile-driving and removal activities (docks, moorage, pier templates)								Pile-driving restriction for temporary piles for August through November To reduce hydroacoustic impacts, no pile driving and no vibratory installation or removal of temporary piles will occur in Knik Arm during high-density beluga whale periods.				
Clearing vegetation – migratory birds Entire project limits-seasonal nesting and staging habitat					Vegetation clearing restriction for May 1 through July 15 No vegetation clearing within project limits to minimize impacts on migratory bird seasonal nesting and staging.							
Construction activities – bald eagles Adjacent to known bald eagle nest near Cairn Point or newly constructed nests, including foraging or roosting sites			Construction activity restriction for March through September Project construction activities will be restricted within a portion of the project area adjacent to the existing Cairn Point eagle nest or newly constructed nests, to minimize impacts on bald eagles during their nesting period. Details on restrictions are pending coordination with the U.S. Fish and Wildlife Service (which will occur 1 year prior to construction) and will likely require a permit for disturbance or take, including foraging or roosting sites.									

Note: Shaded areas show periods of construction activity restrictions.

VIII. Comments on the *Final EIS*

Appendix A contains all comments received on the *Final EIS* from federal and State agencies, local governments, and the public. Appendix A also contains responses to all comments.

IX. Changes Since *Final EIS/Final Section 4(f) Evaluation*

FHWA approved the KAC *Draft EIS/Draft Section 4(f) Evaluation* on September 5, 2006, and the *Final EIS/Final Section 4(f) Evaluation* on December 20, 2007.

Following FHWA approval of the KAC *Final EIS/Final Section 4(f) Evaluation*, Section 106 activities and coordination continued to resolve mitigation measures for adverse impacts on cultural resources. Section 106 issues were resolved with signing of a Programmatic Agreement in December 2008 (see Section V, Section 106, above, and Attachment B).

Also, following FHWA approval of the KAC *Final EIS/Final Section 4(f) Evaluation*, the Cook Inlet beluga whale was listed under the ESA on October 22, 2008. Subsequent coordination and formal Section 7 Consultation under the ESA and updates under the MMPA occurred with NMFS throughout 2009 and 2010. NMFS issued a Biological Opinion for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 which states: “NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat” (See Section VI. Z, *Mitigation Measures for Impacts on Threatened or Endangered Species*, above and Appendix C for further details).

In addition, following FHWA approval of the KAC *Final EIS/Final Section 4(f) Evaluation*, FHWA approved new regulations related to Section 4(f) with codification of 23 C.F.R. § 774, which restated and clarified measures in earlier regulations (23 C.F.R. § 771.135) and established new procedures (see Section IV, Section 4(f), above).

In accordance with 23 C.F.R. § 771.129, KABATA conducted a reevaluation of the KAC *Final EIS/Final Section 4(f) Evaluation* to confirm that the updates listed above and the conclusions and commitments reached in the original document remained valid. The reevaluation was predominantly focused on documentation of compliance with or resolution of issues related to Section 106, the Cook Inlet beluga whale, and Section 4(f) since approval of the KAC *Final EIS/Final Section 4(f) Evaluation*; however, status updates were also reported on for social, fish and wildlife, wetlands, and construction impacts. Based on the reevaluation, FHWA determined that there is no new information or changes to the proposed KAC project that result in new significant environmental impacts that were not previously evaluated and, accordingly, no Supplemental Environmental Impact Statement is warranted.

X. Conclusion

The Knik Arm Crossing *Final EIS* conforms with applicable provisions of 23 C.F.R. § 771 and 40 C.F.R. § 1502.2 and satisfactorily addresses the anticipated environmental impacts that will result from construction of the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, and cut-and-cover tunnel under Erickson Street). All correspondence received on the *Final EIS* prior to this ROD has been reviewed (see Appendix A for substantive comments on the *Final EIS* and responses to those comments). Based on this review, we find that there were no substantive issues or impacts not addressed.

Based on the analysis and evaluation contained in this project's *Final EIS* and after careful consideration of all social, economic, and environmental factors and input from State and local governments, Tribes, and the public, it is my decision that the Northern Access – Erickson Alternative (with the Southern Alignment, 8,200-foot bridge length, cut-and-cover tunnel under Erickson Street) is hereby the Selected Alternative for the KAC project.

Dec 15, 2010
Date

David C. Miller
David C. Miller, Division Administrator
Federal Highway Administration

APPENDIX A

COMMENT SUMMARY APPENDIX

PART 1: COMMENTS RECEIVED ON THE *FINAL EIS* (BY DOCUMENT NUMBER)

PART 2-1: FHWA RESPONSES TO SUBSTANTIVE COMMENTS RECEIVED ON THE *FINAL EIS*

PART 2-2: NONSUBSTANTIVE COMMENTS RECEIVED ON THE *FINAL EIS*

This Appendix A; Comment Summary Appendix to the Record of Decision (ROD) contains copies of comments received from agencies, organizations, and the public in regard to the *Final EIS* and FHWA responses to those comments. **Appendix A-Part 1** contains the original comments received, **Appendix A-Part 2-1** contains FHWA responses to substantive comments, and **Appendix A-Part 2-2** contains a summary of nonsubstantive comments. Nonsubstantive comments are those that merely state an opinion or comment and do not require a response.

APPENDIX A – PART 1:

COMMENTS RECEIVED ON THE *FINAL EIS* (BY DOCUMENT NUMBER)

From: Avanti Corp. [mailto:avanti@mtaonline.net]
Sent: Wednesday, January 09, 2008 2:46 PM
To: DOT ANC KABATA
Subject: Comment on Final EIS/Final Section 4 (f) evaluation KABATA

Comment 1n

TO WHOM IT MAY CONCERN,

I think all of the time and work that has been committed towards the development of the Knik Arm Bridge is time well spent. KUBATA and all of the decision makers in this project got it right and I am for one, 100% in favor of this new, over due, much needed transportation corridor!

Paul Gardner
580 Briar Dr
Wasilla, Ak 99654
(907) 376-3330

From: BARBARA HULBERT [mailto:pfbrh@uaa.alaska.edu]

Sent: Thursday, January 10, 2008 4:27 PM

To: DOT ANC KABATA

Subject: Kink Bridge Final EIS response. 0001(277)56047 Knik Arm Crossing

Betty Fauber, Administrative Director, KABATA, 550 W. 7th Avenue, Suite 1850,
Anchorage, Alaska. 99501

To whom it concerns:

After having reviewed to the best of my ability the material on the CD that you sent, I have the following comments to make:

Comment 1n 1. Coming through the Big Lake area, on the south side of the lake is going to destroy the life styles of everyone living in the area. It will bring unwanted traffic, unsavory businesses and individuals, and increase the unwanted noise level. This is a very residential area where families live and cherish the quiet and natural beauty of the area. The route should follow the proposed train track route north of the Little Susitna River and the already existent Kink-Goose Bay road.

Comment 2s 2. I did not find in the material a reasonable plan to eliminate the toll in the future.

Comment 3s 3. I did not find in the material any emergency plan for vehicles that break down, car accidents, or natural disasters.

Comment 4s 4. There was no mention of foot traffic in case of emergency car break down or accident. For that matter just ordinary walkers, bicyclers, horse riders, dog sledgers, or any of the ordinary highway traffic access that happens in Alaska. How have those concerns been met?

Comment 5n 5. Regardless of the "study" results, putting all those thousands of tons of rock, pilons, and shielding into the Knik Arm are going to have an impact on all things that currently reside in those areas. It will change the natural flow of the water and the shift of the sands and silt. It will alter natural patterns of the salmon and the whales, as well as the life patterns of any of the other inhabitants. The current between the ends of the fill areas will be swifter and more dangerous, as will the build up of the ice chunks. It is my personal belief that the flow of the Knik Arm should not in any way be impeded, rather we should look for some alternative solution that takes us under or over without any direct interference.

Please let me know if this has not gone to the correct place. Thank you for allowing input from a 40 year resident of the Big Lake Area.

Barbara R.
Hulbert

HC 34 Box 2550

&n

From: Sue N. [mailto:qdsn@alaska.net]
Sent: Saturday, January 12, 2008 5:02 PM
To: DOT ANC KABATA
Subject: Knik Arm Bridge

Thank you for the card about the Knik Arm Crossing. I would not want to see any bridge/crossing unless it included producing energy from tidal wave action. It would be a big loss if this opportunity were overlooked.

Thank you for your consideration.

Sue Norgaard

Comment 1n

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION

OFFICE OF HISTORY AND ARCHAEOLOGY

550 W. 7TH AVENUE, SUITE 1310
ANCHORAGE, ALASKA 99501-3565
PHONE: (907) 269-8721
FAX: (907) 269-8908

January 18, 2008

File No.: 3130-1R FHWA KABATA

David Miller
Division Administrator
Federal Highway Administration
PO Box 21648
Juneau, AK 99802

Federal Highway
Administration

JAN 22 2008

Juneau, Alaska

Subject: Knik Arm Crossing – Final Environmental Impact Statement

Dear Mr. Miller:

This office received the Knik Arm Crossing Final Environmental Impact Statement on January 8, 2008. With the significant potential impacts associated with this undertaking, we took time to participate in the National Environmental Policy Act (NEPA) process as well as consult under the National Historic Preservation Act (Section 106). Over the last two years, we have asked for a comprehensive look at the undertaking, a re-evaluation of the Area of Potential Effects and an evaluation of the intensity of the resultant impacts. These concerns are unresolved and unaddressed.

Comment 1

FHWA did not take into consideration the impacts to cultural resources to determine the preferred alternative. To nearly every submitted comment concerning cultural resources, FHWA responded by saying, "Under the Section 106 process (36 CFR 800), FHWA found that the Erickson Alternative will have an adverse effect on the Government Hill Urban Renewal District, and the Alaska State Historic Preservation Office (SHPO) concurred with this finding (letter dated 7-13-2006). Under the 106 process, a Memorandum of Agreement (MOA) is being developed to address mitigation for adverse effects." Deferring to the Section 106 process demonstrates that impacts to historic properties were not given adequate consideration during the alternative decision-making process.

Comment 2

There are still unknown impacts to historic properties that were not considered during the decision making process. A common response to our comments was, "The specific extent of adverse impacts to the Government Hill Urban Renewal Historic District will not be known in detail until specific design elements are developed." Please explain how this unknown was taken into consideration during the decision making process. Could the potential design increase direct, indirect and cumulative impacts to this significant historic district? Are there design alternatives that still must be considered?

Comment 3

FHWA did not address the intensity of the impacts to the resource. The Government Hill Urban Renewal Historic District will lose 15% of its eligible duplexes, 33% of its pre-Urban Renewal resources, and an entire designed streetscape. These are only the direct impacts. The severity of these direct impacts to the first urban renewal project finished in the western United States was

(cont.)

- Comment 3 continued not considered. Demolition of an entire streetscape in the historic district greatly impacts the qualities that make the district eligible for inclusion in the National Register of Historic Places.
-
- Comment 4 FHWA did not adequately address indirect and cumulative impacts. In response to our comment regarding noise, FHWA said the issue was considered in the Noise Impacts Section. Our concern is how noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places. This concern was not considered in the Noise Impacts Section. The district was built after Elmendorf Air Field so the air noise existed; however, vehicular noise is different and must be considered.
-
- Comment 5 Visual impacts will not be completely mitigated by the tunnel. The tunnel emerges before entering the Government Hill Urban Renewal Historic District. The road grade meets the existing topography while still in Government Hill. To accommodate industrial activity, the viaduct will be taller than the buildings in the historic district. How will the introduction of this new element near the boundaries of the historic district impact the visual characteristics that make this district eligible for the register?
-
- Comment 6 The potential impact to archaeological resources from development on the Matanuska Susitna Borough side of the project is still not addressed. We acknowledge that FHWA has funded initiation of a Historic Preservation Plan for areas that will be impacted by the bridge. However, not enough data exists on where prehistoric and historic sites are located. More archaeological survey is needed west of Knik Arm to adequately evaluate the potential impacts from development.
-
- Comment 7 Simply documenting the destroyed buildings, offering to sell the impacted buildings and supplying a very nominal amount of planning money does not appropriately compensate for the loss of an entire streetscape of an important historic district. Further, it does not mitigate the impacts to cultural resources on the Matanuska Susitna side of the project. The potential impacts
- Comment 8 to historic properties in downtown, Ship Creek, Fairview and Midtown are not mentioned in the document. With the preferred alternative, we recommend using the listed mitigation in the FEIS and adding \$1 million for historic preservation in the Matanuska Susitna Borough and \$1 million
- Comment 9 for historic preservation in Anchorage and funding the Anchorage Historic Preservation Officer position for three years to administer this fund.
-

Sincerely,



Judith E. Bittner

Deputy State Historic Preservation Officer

JEB:dfg

Fauber, Betty (DOT)

From: Janel Walton [walton5@gci.net]
Sent: Tuesday, February 12, 2008 11:01 PM
To: DOT ANC KABATA; DOT ANC KABATA
Subject: FEIS for Knik Arm Crossing Bridge

Below are my comments in regards to the Final Environmental Impact Survey for the Knik Arm Crossing Bridge.

CONTACT INFORMATION:

Name: Janel Walton
Address: 433 E. Harvard Avenue #2
Anchorage, AK 99501
Telephone: 907-929-0698
email: walton5@gci.net

MY COMMENTS:

-
- comment 1
S In December of 2005, the community of Government Hill worked with KABATA in a two-day Context Sensitive Design meeting. This meeting was not mentioned in any way in the Final EIS, nor any of the requests for mitigation requested by the community. Among those requests were that anyone who shares a boundary line with a condemned home should have the choice of having their own home condemned in the same process. Also, there were many conditions requested by the neighborhood regarding safety, noise control, etc. Further, the design for the Erickson corridor route does not have the homes that are right next to the construction zone having any type of permanent or temporary relocation. This was also discussed at the CSD meeting and was ignored in the Final EIS. There is no plan in the Final EIS for those homeowners that are so close to the construction zone that they will not be able to live in their homes during this time. Finally, only two houses and one hotel on Erickson Street are listed for condemnation in the design plan. This is not feasible, as those houses that will be condemned are only 10 feet away from other houses and those houses are not mentioned in any way as far as temporary removal, condemnation, or compensation.
- comment 2
S
- comment 3
S

2/14/2008

Fax Transmission

Defenders of Wildlife
Alaska Field Office
333 West 4th Avenue, Suite 302
Anchorage, Alaska 99501
(907) 276-9453 Main
(907) 276-9454 Fax

Attn: Betty Fauber, Administrative Director
Knik Arm Bridge and Toll Authority
550 W. 7th Avenue, Suite 1850
Anchorage, AK 99501
Phone: (907) 269-6698

Fax #: (907) 269-6697

From: Karla M Dutton, Alaska Field Office Director

Phone: 907.276.9420 (direct office line)

Date: 15 February 2008

Number of pages to follow: 7

Comments:

Re: **Knik Arm Crossing Final Environmental Impact Statement: Cook Inlet
Beluga Whale Comments**

Respectfully submitted,
Karla M Dutton



**Alaska Office**

333 West 4th Avenue, #302 | Anchorage, AK 99501 | tel 907.276.9453 | fax 907.276.9454
www.defenders.org

February 15, 2008

Via Facsimile to (907) 269-6697

Betty Fauber
Administrative Director
Knik Arm Bridge and Toll Authority
550 W. 7th Avenue, Suite 1850
Anchorage, AK 99501
Phone: (907) 269-6698

**Re: Knik Arm Crossing Final Environmental Impact Statement: Cook Inlet
Beluga Whale**

Dear Ms. Fauber:

Defenders of Wildlife, Center for Biological Diversity, Cook Inletkeeper, Alaska Center for the Environment, Friends of the Anchorage Coastal Wildlife Refuge, North Gulf Oceanic Society, Dr. Sylvia Brunner and Alaska Community Action on Toxics respectfully submit the following comments on the Knik Arm Crossing Final Environmental Impact Statement ("FEIS"). 73 Fed. Reg. 3464 (Jan. 18, 2008). The FEIS unquestionably falls short of the requirements of the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.* We specifically write to address the significant impacts this project will have on the Cook Inlet beluga whale, which are not fully addressed in the FEIS. Furthermore, the Federal Highway Administration ("FHWA") has, to date, failed to meet its duty pursuant to the Endangered Species Act ("ESA"), 16 U.S.C. 1531 *et seq.*, to confer with the National Marine Fisheries Service ("NMFS") regarding the impacts of the project on the beluga whale and to assess available means of minimizing such impacts. See 16 U.S.C. § 1536(a)(4). For the reasons set forth below, and because the Knik Arm bridge would not meet the needs of the Upper Cook Inlet region, we again urge the FHWA to select the No Action Alternative. At a minimum before proceeding with an action that may irreparably harm the already critically imperiled Cook Inlet beluga whale, the FHWA must complete a supplemental Environmental Impact Statement which fully considers the issues raised prior to the DEIS and below.

The Cook Inlet Beluga Whale

The Cook Inlet beluga whale population has been in decline since at least the 1970s—suffering a dramatic decline in the mid to late 1990s—and today shows no sign of recovering to its historic population level. In the Cook Inlet the beluga faces many threats that may reduce the current population further, pushing it over the precipice into extinction. Such threats include, but

National Headquarters
1130 17th Street, N.W.
Washington, D.C. 20036-4604
tel 202.682.9400 | fax 202.682.1331

are not limited to, natural sources of mortality such as strandings, disease, and predation, natural reductions in available habitat, anthropogenic noise, various kinds of industrial activities, the construction of human infrastructure in sensitive habitats, toxic contamination from industrial and urban sources, disturbances from vessel traffic, competition for prey from fishing, reduction in the availability of prey species, and other as yet unidentified stressors. The population is especially vulnerable to adverse impacts from single events, such as a large-scale stranding or a catastrophic oil spill, and to contagious disease because these extremely social whales congregate to hunt, mate and rear their young.

The Cook Inlet population of beluga whales was first identified as potentially requiring the special protections of the ESA nearly twenty years ago. 53 Fed. Reg. 33,516 (Aug. 31, 1988). But it was not until 2000 that NMFS took action to protect the species, initially listing the whale as "depleted" under the Marine Mammal Protection Act ("MMPA"), 16 U.S.C. § 1361 *et seq.* See 65 Fed. Reg. 34,590 (May 2000). NMFS predicted that restrictions on Alaska Native hunting imposed by regulations pursuant to the MMPA would lead to the recovery of the Cook Inlet beluga whale population. NMFS, Subsistence Harvest Management of Cook Inlet Beluga Whales Final Environmental Impact Statement (2003); 69 Fed. Reg. 17,973 (Apr. 6, 2004) (regulations governing taking of Cook Inlet beluga whales by Alaska Natives for subsistence purposes).

Since that time however, the Cook Inlet beluga whale population has shown no signs of recovery. As a result, on April 20, 2006, a number of groups listed above petitioned NMFS to list the beluga as "endangered" under the ESA. The petition summarized the natural history of the beluga whale, the information available on the Cook Inlet population of beluga whales, and the current and future threats to the viability of the Cook Inlet beluga whale population and to its habitat. In response to this petition, NMFS published a 90-day finding that the petition presented substantial scientific or commercial information indicating that the petitioned action may be warranted, and initiated a status review of the species. 71 Fed. Reg. 44,614 (Aug. 7, 2006). NMFS subsequently proposed the Beluga for listing on April 20, 2007. 72 Fed. Reg. 19,854 (Apr. 20, 2007).

Federal Law Requires that the FHWA Consider the Impact of the Project on the Cook Inlet Beluga Whale

NEPA, the "basic national charter for protection of the environment," 40 C.F.R. § 1500.1(a), requires that when a federal agency proposes to undertake, or permit, an activity "significantly affecting the quality of the human environment," it must first prepare an Environmental Impact Statement ("EIS") to review the effects of the proposed action and to consider reasonable alternatives. 42 U.S.C. § 4332(2)(C); *see also* 40 C.F.R. § 1500.2. NEPA ensures "the agency . . . will have available, and will carefully consider, detailed information concerning significant environmental impacts" and "guarantees that the relevant information will be made available to the larger [public] audience." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). NEPA requires that such environmental information and review be provided "before decisions are made and before actions are taken." 40 C.F.R. § 1500.1(b); *see also Found. for N. Am. Wild Sheep v. United States Dep't of Agric.*, 681 F.2d 1172, 1181 (9th Cir. 1982) ("NEPA expresses a Congressional determination that procrastination on environmental concerns is no longer acceptable.").

The ESA, in turn, requires that "[e]ach federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed"—such as the Cook Inlet beluga whale. 16 U.S.C. § 1536(a)(4). This conference is intended to "assist in identifying and resolving potential conflicts at an early stage in the planning process." 50 C.F.R. § 402.10(a). The culmination of such a conference is the documented "advisory recommendations" from NMFS to the action agency, "on ways to minimize or avoid adverse impacts." 50 C.F.R. § 402.10(c), (e).

Discussion

I. The FHWA Fails to Address Properly the Impacts on the Cook Inlet Beluga Whale

Comment 1 R There are a number of impacts to the Cook Inlet's beluga whales that will result from the construction and operation of the proposed Knik Arm Bridge that are of serious concern, yet the FEIS understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale to extinction. The FEIS also fails to address adequately the numerous comments highlighting the significant flaws in the DEIS. See, e.g., NMFS, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2006) ("NMFS 2006"); Marine Mammal Commission, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2006) ("MMC 2006"); Department of the Interior, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2007) ("DOI 2006"). Thus, while the FHWA has generally "identified the relevant environmental concern," *Grand Canyon Trust*, 290 F.3d at 340-41, it has failed to take a "hard look" at those issues. *National Wildlife Federation v. Norton*, 332 F. Supp.2d 170, 182 (D.D.C. 2004; see also *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508, 526-27 (9th Cir. 2007) (Agency FEIS violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of proposed bridge)).

Comment 3 S To begin with, Marine Mammal Commission ("MMC") commented previously that "some of the optimistic conclusions made in the DEIS may stem from a basic misunderstanding of the status of the Cook Inlet beluga whale." MMC 2006, at 2. This has not been addressed in the FEIS. Specifically, the FEIS still states that "[f]or the past several years the [beluga whale] population was thought to have stabilized, with an estimated 300 to 500 beluga whales now inhabit Cook Inlet." See FEIS, 3-211. This summary is patently inconsistent with the conclusions reached by IUCN-The World Conservation Union, which determined that the population is "critically endangered." Lowry, L., G. O'Corry-Crowe, and D. Goodman. 2006. *Delphinapterus leucas* (Cook Inlet population). In IUCN 2006. 2006 IUCN Red List of Threatened Species. Indeed, despite properly acknowledging that the population continues decline, the FEIS fails to mention the IUCN's conclusion that "the underlying growth rate is so low that there is a 71% probability that if present conditions persist the population cannot withstand any take, and will decline in the future." *Id.* (emphasis added).

Comment 4 S Furthermore, the FEIS provides little justification for the conclusions reached about the beluga's use of the project site and the Knik Arm generally. The Knik Arm Bridge and Toll Authority ("KABATA") has conducted a one-year study of beluga whale movements in Knik Arm and at the proposed construction site, through LGL Alaska Research Associates, Inc. FEIS, at 3-212

(LGL 2006). The limited scope of this study, however, undermines the conclusions drawn by FHWA about beluga whale habitat-use patterns in and around Knik Arm. See MMC 2006, at 3. As the MMC notes, "at least some of the results of the LGL 2006 report may not be as clear-cut as portrayed" by the FHWA and thus the conclusions "may be an artifact of several possible biases in the studies."¹ *Id.* Relying principally on the LGL 2006 report ignores other available information which demonstrates that not only is the entire reach of the Knik Arm important habitat for beluga whale feeding, resting, and predator avoidance but should be considered a "high-use area[]." See MMC 2006, at 4.

Given the FHWA's failure to describe properly the beluga's use of the Knik Arm—or the true status of the species, and its vulnerability to the effects of the project—the FEIS predictably misstates the potential impacts of the bridge's construction on the species. For example, the FEIS fails to address fully the potential direct impacts of bridge construction on the whales' behavior in the vicinity of the bridge. See FEIS, 4-251-252. The assertion that the bridge and construction activities will affect beluga movements "more" than other activities, such as feeding or resting, simply because "most of the whale sightings within the Study Area were associated with whales transiting in and out of the Knik Arm" highlights the unreliability of assumptions made based on the LGL report. Indeed, as the MMC noted in its comments on the DEIS, "data presented . . . show a substantial amount of observed resting and feeding activity at the two sites closest to the project area." MMC 2006, at 4-5. Had FHWA properly accounted for the whale's use of the construction site, rather than dismissing these impacts, the FHWA could have fully addressed the impact on whale behavior and the resulting impact on the population as a whole.

The FEIS's shortcomings are not solely based on the FHWA's misinterpretation of the whale's status, however. The FEIS also fails to address the many direct impacts the project will have on the species. For example, the project could directly impact beluga prey species. Beluga whales depend on the health of anadromous fish runs in Cook Inlet. These runs, already threatened by continued development, and by the loss of upland habitat in Cook Inlet that is important for the health of anadromous streams, will be impacted by the project. See, e.g., FEIS, at 4-231. However, the FEIS fails to discuss the impact this may have on the belugas which use the Knik Arm as a primary feeding area. FEIS, at 4-252 (concluding "Because fish passage would not be expected to be adversely affected by the bridge abutments, no adverse impacts to beluga foraging would be expected."); see also NMFS 2006, at 2 ("The proposed bridge would adversely affect habitat for

¹ The MMC notes:

Among other possible explanations for the observed results were that (1) there was less sighting effort at many locations during the winter (none at West Crossing and Fort Richardson; see p. 4-3 of the report), (2) sighting conditions were recorded as being poorer during that period, December-March [], (3) sea ice was present during November-February, which likely reduced detection rates [], and (4) the surfacing behavior of whales changed beginning in November in such a way that it would likely reduce sighting rates[]. These factors suggest that the LGL shore-based observations may not provide an unbiased measure of seasonal whale occurrence.

MMC 2006, at 3.

Com 5 Pacific salmon in Knik Arm"); DOI 2006, at 5-6. Further highlighting the potential impact on the
 Cont. beluga, NMFS has also noted that the "nutritional effects due to the loss of Knik Arm salmon as a
 prey source and the competition for the few remaining preferred feeding habitat areas in the upper
 Inlet could substantially reduce the potential for recovery of this depleted population." NMFS
 2006, at 1.

Comment 6 Similarly, the FEIS fails to address properly the potential for both short-term and long-term
 R harm and harassment to the beluga from construction noise. As the FEIS notes, the adverse effects
 of construction activities could include "avoidance, changes in resting or feeding cycles,
 displacement from habitat, alertness, masking of sounds and changes in vocal behavior, changes in
 swimming or diving behavior, altered direction of movement, and physical injury." FEIS, at 4-252.
 Acknowledging these impacts, the FHWA then concludes generally that "[d]isplacement of beluga
 whales by noise would not be permanent and would not be expected to have long-term effects." *Id.*
 This conclusion is wholly unsupported. The Cook Inlet beluga whales are particularly adapted to
 the "turbid and regularly darkened waters of the Cook Inlet and are almost wholly dependent on
 their acoustic environment." NMFS 2006, at 1. Accordingly, as NMFS points out: "Man-made
 noise has the *capacity to harass and injure these whales.*" *Id.* (emphasis added). NMFS, unlike the FHWA,
 recognized that "[a]ny change in the use of Knik Arm by beluga whales, and especially the upper
 Arm, due to the Knik Arm bridge *would be expected to have direct and measurable adverse effects on this
 population.*" *Id.* (emphasis added).

Comment 7 Furthermore, the FEIS fails to account adequately for potential indirect impacts from the
 R project. For example, the FEIS attempts to qualify the impact of "vehicular noise" from the bridge
 by noting that "[e]vidence shows that beluga whales habituate to various types of activities." FEIS,
 at 4-255. The FEIS notes that "[whales] have been regularly seen at the Port of Anchorage,
 approaching the Port during dredging and construction activities, . . . and they have been seen under
 and near the vehicular bridge at Knik River at the head of Knik Arm."² *Id.* The FEIS thus
 concludes that "beluga whales would be expected to adapt to the changes and may continue to use
 habitat in the Study Area." However, beluga whales are negatively affected by anthropogenic noise
 throughout the Inlet and as NMFS notes, "[o]perationally, the bridge and its supports may present a
 source of continuous noise." NMFS 2006, at 1. NMFS previously acknowledged that although in
 fact disturbed by the noise, whales may "continue to use some [noisy] areas for feeding and traveling
 because these areas are critical to their survival." 65 Fed. Reg. at 38,788. Moreover, there is
 evidence that when using these areas, the beluga's behavior has been affected. NMFS 2006, at 1
 (noting that belugas seen near the Port of Anchorage have decreased surfacing intervals.).

Comment 8 S The FEIS also asserts, again without any justification, that shore development, triggered by
 the bridge's existence, will not impact the whales. Specifically, the FEIS finds that "[r]esidential,
 commercial and industrial development along the western shoreline of the Knik Arm" and the
 associated use of the shoreline, "would have no adverse impact on beluga behavior in nearshore
 waters." FEIS, at 4-255. NMFS, in contrast, found this type of development would result in
 "unquantifiable indirect impacts to these whales." NMFS 2006, at 1.

² NMFS directly disputes the validity of this statement, noting that there is only one reported incident of a
 lone beluga coming close enough to the Knik River bridge to be seen by motorists, in 2003. NMFS 2006, at 1-2.

The FEIS finally notes that the cumulative effects of bridge project and past, present and reasonably foreseeable projects and operations will negatively impact the Cook Inlet's beluga whales. FEIS, at 4-320; *see* 40 C.F.R. § 1508.7. However, the FEIS's analysis fails to provide the "quantified or detailed information" necessary to ensure that the required "hard look" has been taken. *Klamath-Siskiyou Wildlands Center v. Bureau of Land Mng't*, 387 F.3d 989, 993-94 (9th Cir. 2004) "General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Id.* ("The analysis must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects."). The FEIS draws its broad conclusions about the negative cumulative impact to the species, from a general discussion that does not constitute a hard look at the problem.

This beluga population is exposed to the largest industrialized coastal area in Alaska. As a result, the current threats to beluga whale habitat include both habitat loss from development, and habitat loss through displacement from conflict with other human-caused activities. NMFS acknowledged seven years ago that "[b]ecause Cook Inlet belugas are geographically isolated, perturbations that are humanly-induced could have a dramatic effect on the population." 63 Fed. Reg. at 64,229. Industrial, commercial and residential developments and associated activities all may result in the degradation of the available habitat for Cook Inlet beluga, whale prey species and of the marine environment upon which Cook Inlet beluga whales depend.³ Industrial activities, such as port usage, oil industry related activities (e.g., drilling, seismic testing),⁴ onshore and offshore municipal and industrial pollution discharges, U.S. Army Corps of Engineer port-related dredging activities in Cook Inlet, and vessel traffic—particularly in light of the Municipality of Anchorage's proposed port expansion⁵ and the recent construction of Port MacKenzie—all result in the diminishment of available habitat for Cook Inlet beluga whales. These impacts, which are adversely affecting both beluga whales and the species they prey upon, should have been examined in the FEIS.

³ Cook Inlet is subject to many sources of contamination, including urban and agricultural run-off, industrial and military activity, and wastewater from the cities and towns around Cook Inlet that degrade beluga whale habitat. Specifically, a total of eleven communities discharge approximately 42 million gallons per day of treated municipal wastewater into Cook Inlet, yet NMFS acknowledges that "the additional suspended load from wastewater and the impacts of minimally treated wastewater on the beluga whales is unknown." NMFS, Draft Conservation Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*), at v (2005).

⁴ Oil exploration, leasing and development also currently pose a threat to the marine environment beluga whales depend on. Oil development causes direct impacts to habitat, such as oil spills, which could devastate Cook Inlet beluga whales. NMFS recognizes that these activities could adversely impact the whale. *See, e.g.*, Draft Conservation Plan, at 40 (remarking that "geophysical seismic . . . has the potential to harass or harm marine mammals, including beluga whales."); *id.*, at 41-42 (discussing possible adverse impacts from oil spills).

⁵ As NMFS noted when acknowledging the Army Corps of Engineers' decision to permit the Anchorage Port expansion, over NMFS's objections, "[t]he port expansion project is large, controversial, and will have substantial environmental impacts that have not received adequate attention in the permitting process." Letter from Robert Mecum, Acting Administrator, Alaska Region, NMFS, to Col. Kevin Wilson, U.S. Army Corps of Engineers (Aug. 10, 2007).

II. The FHWA Has Failed to Comply with the Requirements of the ESA

As noted above, any federal agency proposing to take an action that is likely to "jeopardize the continued existence" of a species that has been proposed for listing must confer with the wildlife agency charged with the protection of such species, here NMFS. To "jeopardize" a species means to "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02.

This standard is met here. The MMC has noted that "the population has declined since 1998 and, in all likelihood, is continuing to decline even without additional stressors such as construction of a large bridge in the vicinity of one of the key habitats used by the population." MMC 2006, at 2-3. NMFS, noting that the "proposed work would have significant adverse effects on belugas, and at a magnitude from which the small population might not recover," similarly concluded that "the preferred alternative could *threaten the recovery and conservation of the Cook Inlet beluga whale*." NMFS 2006, at 2 (emphasis added).

NMFS has made FHWA aware of its responsibility to enter into a conference on the impacts of the project on the beluga. See FEIS, App. J, Meeting Record (May 18, 2007). As the project will likely jeopardize the continued existence of the beluga, and "the most conservative strategy is necessary to foster their recovery," NMFS 2006, at 2, the FHWA must initiate a conference with NMFS. See 16 U.S.C. § 1536(a)(4); 50 C.F.R. § 402.10.

Conclusion

The Cook Inlet beluga whale faces a suite of risks. The limited knowledge of this population's ecology, life history, and reproductive potential, as well as the uncertainty regarding current factors adversely affecting the population and its habitat require that any action that may cause the population additional stress be approached with extreme caution and rejected if it is possible that the species will be driven further to the brink of extinction. The Knik Arm Bridge is such a proposal. Yet, the FHWA has not addressed fully the potential impacts this project will have on the whale, and as a result, before any decision take may affect the whale can be made, FHWA must confer with NMFS and produce a Supplemental EIS. The Cook Inlet beluga, however, most likely cannot withstand the impact associated with the bridge; the FHWA's limited and incomplete analysis demonstrates as much. Therefore, we again urge that the FHWA adopt the No Action Alternative.

Sincerely,

Karla Dutton
Alaska Director
Defenders of Wildlife
333 W 4th Avenue #302
Anchorage, Alaska 99501

Fax Transmission

Defenders of Wildlife
Alaska Field Office
333 West 4th Avenue, Suite 302
Anchorage, Alaska 99501
(907) 276-9453 Main
(907) 276-9454 Fax

Attn: Betty Fauber, Administrative Director
Knik Arm Bridge and Toll Authority
550 W. 7th Avenue, Suite 1850
Anchorage, AK 99501
Phone: (907) 269-6698

Fax #: (907) 269-6697

From: Karla M Dutton, Alaska Field Office Director

Phone: 907.276.9420 (direct office line)

Date: 15 February 2008

Number of pages to follow: 1

Comments:

Re: **Knik Arm Crossing Final Environmental Impact Statement: Cook Inlet
Beluga Whale Comments**

Respectfully submitted,
Karla M Dutton



**Resending last page with signature.*

The documents accompanying this facsimile transmission contain information which is confidential and/or privileged. If you received this in error, please contact the sender immediately at (907) 276-9453. Thank you.

II. The FHWA Has Failed to Comply with the Requirements of the ESA

As noted above, any federal agency proposing to take an action that is likely to "jeopardize the continued existence" of a species that has been proposed for listing must confer with the wildlife agency charged with the protection of such species, here NMFS. To "jeopardize" a species means to "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02.

This standard is met here. The MMC has noted that "the population has declined since 1998 and, in all likelihood, is continuing to decline even without additional stressors such as construction of a large bridge in the vicinity of one of the key habitats used by the population." MMC 2006, at 2-3. NMFS, noting that the "proposed work would have significant adverse effects on belugas, and at a magnitude from which the small population might not recover," similarly concluded that "the preferred alternative could *threaten the recovery and conservation of the Cook Inlet beluga whale.*" NMFS 2006, at 2 (emphasis added).

NMFS has made FHWA aware of its responsibility to enter into a conference on the impacts of the project on the beluga. See FEIS, App. J, Meeting Record (May 18, 2007). As the project will likely jeopardize the continued existence of the beluga, and "the most conservative strategy is necessary to foster their recovery," NMFS 2006, at 2, the FHWA must initiate a conference with NMFS. See 16 U.S.C. § 1536(a)(4); 50 C.F.R. § 402.10.

Conclusion

The Cook Inlet beluga whale faces a suite of risks. The limited knowledge of this population's ecology, life history, and reproductive potential, as well as the uncertainty regarding current factors adversely affecting the population and its habitat require that any action that may cause the population additional stress be approached with extreme caution and rejected if it is possible that the species will be driven further to the brink of extinction. The Knik Arm Bridge is such a proposal. Yet, the FHWA has not addressed fully the potential impacts this project will have on the whale, and as a result, before any decision take may affect the whale can be made, FHWA must confer with NMFS and produce a Supplemental EIS. The Cook Inlet beluga, however, most likely cannot withstand the impact associated with the bridge; the FHWA's limited and incomplete analysis demonstrates as much. Therefore, we again urge that the FHWA adopt the No Action Alternative.

Sincerely,



Karla Dutton

Alaska Director

Defenders of Wildlife

333 W 4th Avenue #302

Anchorage, Alaska 99501



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 PROGRAM PLANNING AND INTEGRATION
 Silver Spring, Maryland 20910

FEB 19 2008

Betty Fauber
 Administrative Director
 KABATA
 550 West 7th. Avenue, Suite 1850
 Anchorage, Alaska 99501

Dear Ms. Fauber:

The National Oceanic and Atmospheric Administration (NOAA) has reviewed the 2007 Knik Arm Crossing Final Environmental Impact Statement (FEIS) / Final Section 4(f) Evaluation. As a cooperating agency under 40 CFR Part 1501, we have focused much of our input and analysis on the effects of bridge construction and operation on Cook Inlet beluga whales, a species which is currently depleted under the Marine Mammal Protection Act (MMPA) and proposed for listing under the Endangered Species Act (ESA), and on anadromous fish. We continue to have very serious concerns about the environmental consequences of the project, especially for beluga whales. We provide these comments on the FEIS for consideration as part of the Federal Highway Administration's decision-making process.

NOAA's concerns and issues were presented in detail in our November 17, 2006 response letter to the Draft Knik Arm Crossing Environmental Impact Statement (DEIS). In response to those comments, the FEIS presents additional analysis of bridge crossing design alternatives, such as alternate transportation modes and floating and suspension bridge designs. The FEIS similarly carries through the 14,000-foot bridge length for comparative purposes, although noting that this alternative does not meet the stated purpose and need. The FEIS concludes that only the 8,200-foot bridge length meets the purpose and need of the proposed action. The environmental consequences of that alternative cause us to continue to support the No Action Alternative as the best option for promoting the recovery of Cook Inlet belugas and sustaining upper Cook Inlet salmon runs.

Summarizing, the FEIS responds to our previous comments through provision of additional analyses and clear statements regarding adverse effects. However, these additional analyses have not removed NOAA's concerns, and our position on this project in regard to beluga whales, Essential Fish Habitat, and our marine and freshwater trust resources has not changed.

Sincerely,

Rodney F. Weiher, Ph.D.
 NOAA NEPA Coordinator



Printed on Recycled Paper





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10

1200 Sixth Avenue
Seattle, WA 98101

February 15, 2008

Reply to
Attn Of: ETPA-088

Ref: 05-001-FHW

Mr. David C. Miller, Division Administrator
Federal Highway Administration
Alaska Division
709 West 9th Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802Federal Highway
Administration

FEB 19 2008

Juneau, Alaska

Dear Mr. Miller:

The U.S. Environmental Protection Agency (EPA) has reviewed the **Knik Arm Crossing Final Environmental Impact Statement and Final Section 4(f) Evaluation (FEIS)**. We are providing comments in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

Comment 1

In our review of the 2006 draft EIS for the Knik Arm Crossing; we concluded that the proposed project may cause avoidable adverse environmental impacts to wetlands and aquatic resources. Also, other alternatives (such as the No Action or the Expandable Ferry Alternatives) appear to be available to provide improved transportation service between Anchorage and the Mat-Su while minimizing environmental and related economic and social impacts. Therefore we rated the document EO-2, Environmental Objections, Insufficient Information. We made recommendations for substantive additional information and actions pertaining to the range of alternatives, analysis of environmental consequences, and mitigation for impacts.

While we are pleased to see that the FEIS includes some promising mitigation components, the basis of our objections remains. The promising mitigation components include funding for a 2-year staff person in the Mat-Su Borough to address development and permitting, and a new Memorandum of Agreement (MOA) among the Knik Arm Bridge and Toll Authority (KABATA), the Alaska Department of Transportation (ADOT&PF) and the Mat-Su Borough regarding extension of the National Highway System (NHS) from the Parks Highway. However, the comments that were the basis of our objections have not been addressed. Consequently, we continue to have environmental objections to the proposed project. Our key remaining concerns are discussed below along with our recommendations.

Range of Alternatives, Clean Water Act Section 404(b)(1) Guidelines

Comment 2

The FEIS did not expand the range of alternatives beyond "No Action" and one bridge alternative with approach options. We believe that other alternatives exist that appear reasonable, feasible, and compatible with the current direction of transportation and growth in the Anchorage Bowl and the Mat-Su Borough. These include the Expanded Ferry Alternative

and the Transportation Package Alternative, which includes the same commuter rail system that is currently being explored by the Alaska Railroad Corporation (Anchorage Daily News, 2/6/08).

Comment 3

As presented, the range of alternatives may not comply with the Clean Water Act Section 404(b)(1) Guidelines. The range of alternatives must include those that are practicable “in light of the overall project purposes” [40 CFR 230.10(a)(2)]. In addition, the definition of “financial feasibility” is subjective, and does not constrain or change the required evaluation of practicable alternatives.

The “Only Practicable Alternative Finding” included in Appendix M of the FEIS does not meet the 404(b)(1) requirements for evaluation of practicable alternatives. This Finding does not alter the legal responsibility of the Corps and EPA to evaluate practicable alternatives to proposed discharges of dredged or fill materials and to only authorize the least environmentally damaging practicable alternative (LEDPA).

As stated in the Corps’ comments on the Draft EIS, without the development of practicable alternatives or adequate data to indicate the impact of each of the alternatives it may be “impossible to determine which alternative would comply with the Section 404(b)(1) Guidelines” or determine the type and amount of mitigation that may be required.

Recommendations:

Comment 4

- We believe that additional alternatives should be evaluated to comply with Clean Water Act Section 404(b)(1) guidelines and NEPA, including the Expandable Ferry and the Transportation Package Alternatives, which do not preclude a future bridge, and would likely expand the transportation system in a manner and at a pace that would be less damaging to the environmental, economic, and social fabric of the region. Also include alternatives with longer bridge lengths, whether rail or vehicular, in order to minimize fill in waters of the U.S. and its associated impacts to Knik Arm hydrology, sedimentation, and essential fish habitat. This should include the 14,000 ft bridge, and/or a bridge alternative that is substantially longer than 8,200 ft, in consultation with the Corps of Engineers, NOAA Fisheries, and other resource agencies.

Environmental Consequences and Mitigation

Comment 5

Water quality, beluga whales. We continue to have concerns about the effects of untreated stormwater from the project. Also, the FEIS has not been updated to acknowledge that the beluga has now been proposed to be listed as endangered under the Endangered Species Act (ESA). We believe that the impacts of the direct, indirect, and cumulative effects of the proposed project on beluga whales could be substantial.

Recommendation:

- To prevent pollution, we continue to advise that runoff from the proposed bridge be detained, treated, and/or otherwise managed to prevent pollution to Knik Arm.
 - In light of the proposed listing of beluga whales, it would be prudent to analyze a range of alternatives and mitigation that would be protective of the species.
-

Comment 6

Hydrology and sedimentation. The FEIS presents additional data regarding suspended sediment, seabed critical shear stress, and marine hydrology. However, new modeled outcomes have not been provided to more accurately disclose the effects of the project on sedimentation, essential fish habitat, fish movement and survival, beluga whales, or the Port of Anchorage. For example, the FEIS describes the “boundary layer wedge (BLW)” as an area within which flow velocities will be lowered such that juvenile fish will be able to navigate their way past fill embankments. However, since this wedge will form down-current and thirty feet away from the face of abutments, there will still be high flows near the embankments that can impede passage of juvenile fish.

Recommendation:

- Because the fill embankments may potentially act as passage barriers, these effects should be disclosed and mitigated.

Comment 7

Air quality, air toxics. The FEIS does not address diesel emissions from construction equipment and truck traffic, stating in the response to comments that one cannot practically determine the emissions of the local fleet of construction equipment that would be used on the project. Composite emission factors from EPA’s NONROAD model for construction equipment and MOBILE6.2 for on-road equipment are readily available and have been used for other similar projects.

Comment 8

The EIS states that the predominant concern is only for long-term chronic effects of mobile source air toxics (MSAT). EPA believes that short term exposures can cause problems or exacerbate existing ones. The *EPA Health Assessment Document for Diesel Engine Exhaust*, May 2002, states that “Short-term (i.e., acute) exposures can cause irritation and inflammatory symptoms of a transient nature, these being highly variable across the population. The assessment also indicates that evidence for exacerbation of existing allergies and asthma symptoms is emerging.” As described in FHWA’s *Interim Guidance on Air Toxics Analysis in NEPA Documents*, mitigation measures, strategies, and solutions for countering the effects of MSAT emissions are effective and readily available.

Comment 9

As stated in our comments on the DEIS, we believe a cumulative effects analysis for air quality for this project should address the effects from different sources of the same pollutants that would be generated from project construction and operation. Such an analysis is not included in the FEIS. For a project of this magnitude it is important to analyze and disclose mobile source air toxics emissions, particularly in the Government Hill area where 46.8% of the residents belong to a minority population.

Recommendations:

Comment 7 cont.

- Provide emissions estimates for construction equipment and truck traffic during project construction, disclose the communities and sensitive receptor locations exposed to these emissions, and discuss the human health effects of these pollutants.

Comment 8 cont.

- Commit to mitigation measures for countering the effects of construction-related MSAT emissions.

Comment 9 cont.

- Provide a cumulative effects analysis for air quality, including air toxics emissions from mobile sources and from different sources of the same pollutants that would be generated from project construction and operation.

Comment 10

Dispersed Development in the Mat-Su Borough. We are pleased that KABATA has committed funding to pay for one staff person for two years at the Mat-Su Borough to address development, and an additional \$70,000 for other priority work in the Mat-Su. However, in order to mitigate impacts from this project the Mat-Su Borough (MSB) has additional requests (itemized in previous communications). In our February 16, 2006 letter we requested there be a multi-party "Mitigation Consultation Forum" established as a possible mechanism to work collaboratively toward desirable and sustainable outcomes in the Mat-Su.

Recommendation:

- The ROD should disclose Mat-Su Borough's mitigation requests and costs, and include adequate strategies to support these needs. To avoid preventable impacts, development controls that result from inventory, comprehensive planning, and citizen involvement and education should be in place prior to project construction.

Comment 11

Wildlife impacts, moose strikes. The Knik Arm Crossing (KAC) and its proposed road paving from Point MacKenzie to Burma Road would threaten the most concentrated moose population in the Mat-Su and in Alaska. Moose populations are heavily concentrated (estimated 6500 moose) in the game management unit where the proposed project would occur and where human population growth would be most prevalent in the Mat-Su as a result of the proposed project.

We appreciate that KABATA has committed \$50,000 for study of moose in the Point MacKenzie study area. However, it is not likely that this amount will be sufficient to obtain the minimum necessary baseline information for a moose study; a more realistic estimate is approximately \$700,000. After the studies, mitigation must also be designed and implemented.

Recommendations:

- In consultation and agreement with Alaska Department of Fish & Game (ADF&G) and other partners, increase funding for needed moose studies.
- Communicate and partner with entities affected by the road paving/expansion at Pt. MacKenzie, including ADF&G, Alaska Railroad Corporation, ADOT&PF, FHWA, Alaska DNR Office of Habitat Management and Permitting, and Alaska Division of Forestry.
- Fund the necessary mitigation measures developed in response to the moose studies.

Comment 12

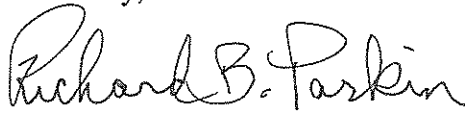
Financial feasibility. The FEIS does not present a substantive explanation, with supporting information, that shows how the "not-to-exceed \$600 million" cost will be achieved. This is of particular concern, since the proposed project may not meet the stated Purpose and Need with respect to financial feasibility, and the environmental mitigation costs for the proposed project would be substantially higher than what has been committed thus far.

Recommendations:

- Demonstrate financial feasibility for the proposed project, including construction timelines that span more than 2 years.
 - Disclose ability and intent to adequately fund the necessary mitigation as identified by resource agencies and the Mat-Su Borough.
-

We appreciate the opportunity to be involved in this project and request to be kept informed and/or to be included in your future efforts to address these issues. If you have questions, or would like to discuss these comments, please contact Elaine Somers of my staff at (206)553-2966 or at somers.elaine@epa.gov, or Christine Reichgott, NEPA Review Unit Manager at (206)553-1601 or at reichgott.christine@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Richard B. Parkin". The signature is written in a cursive, flowing style.

Richard Parkin, Acting Director
Office of Ecosystems, Tribal and Public Affairs



Municipality of Anchorage

P.O. Box 196650 • Anchorage, Alaska 99519-6650 • Telephone: (907) 343-4431 • Fax: (907) 343-4499 <http://www.muni.org>

Mayor Mark Begich

Office of the Mayor

February 19, 2008

Mr. Andrew J. Niemiec, Executive Director
Knik Arm Bridge & Toll Authority
State of Alaska Department of Transportation
and Public Facilities
550 W. 7th Avenue, Suite 1850
Anchorage, AK 99501

Mr. David C. Miller
Division Administrator
Alaska Division Office, FHWA
P.O. Box 21648
Juneau AK 99802

Subject: Comments on the Knik Arm Crossing Final Environmental Impact Statement

Dear Mr. Niemiec and Mr. Miller:

The Municipality of Anchorage appreciates once again the opportunity to comment on the Environmental Impact Statement (EIS) for the Knik Arm Crossing. It's evident that there are still disagreements in the technical analysis, financial assumptions, the overall long-term affect the bridge would have on the land use pattern and economic impact as well as the future policy implications to the Anchorage Bowl and the region.

The Federal Highway Administration (FHWA) decision to select the Recommended Alternative to be the North Access – Erickson Alternative with an 8200' bridge is clear in the FEIS. The basis for the recommendation still leaves many concerns to be addressed. The FEIS recognizes these concerns; however suggest that they will be addressed a later time which is of serious concern to the Municipality. Unless these issues are resolved satisfactorily, especially the mitigation of Government Hill neighborhood improvements and the construction of Gambell/Ingra connection by a date certain, I will continue to oppose this Record of Decision.

The response to Municipal comments (160) located in Appendix K, pages 40 through 80, of the FEIS were reviewed by MOA staff. It is apparent the FHWA reviewed our comments and offered some thoughtful responses. In some cases we concur and appreciate the clarification of the issues, in other cases, we must disagree.

The FEIS is voluminous and efforts to comb through the documents every detail is challenging, however the Municipality has targeted it efforts in our review. As such, our comments and response to MOA issues are based on a few key technical, financial and policy matters in the FEIS.

Sincerely,

Mark Begich
Mayor

Community, Security, Prosperity

Comments on the Knik Arm Crossing Final Environmental Impact Statement:

In review of the Final Environmental Impact Statement (FEIS) for the Knik Arm Crossing, the Municipality would like to offer these comments that illustrate the changes the FEIS has include as a result of our original comments on the Draft EIS. In addition, take this opportunity to express some concerns that continue to be viewed as unresolved by the Municipality. Finally, there are some key edits/ clarification that are necessary to provide constancy in the text related to the response to comments and the FEIS text and accompanying exhibits.

The Municipality supports the changes and response to issues listed below reflected in FEIS.

- Comment 2
1. The edits to the FEIS reflect the complete Anchorage Assembly Resolution, in support of the Knik Arm Crossing, by including "subject to resolution of environmental and economic issues"
 2. In the event the project does proceed, the offer to advance purchase for hardship, protection or at a property owners request is commendable.
 3. FHWA's commitment to apply Context Sensitive Solutions in the design and development the project is recognized in the FEIS.
 4. Recognition that preserving and accommodating vehicle, pedestrian and transit access to the Government Hill neighborhood.
 5. Recognition that the Knik Arm Crossing will not require any future local, state, federal funds and that there is no financial recourse to responsibility to the State or local governments.
 6. Related to the financial expectations of the project, given existing state and federal funds programmed for this project, the Municipality would agree that the capital markets will ultimately decide the financial feasibility of the project.
 7. "In the real world, financial close for toll-backed financing cannot occur until after a Record of Decision selecting a build alternative has been obtained, among other conditions precedent to a financial close. In the event the capital marketplace determines the project is not a good investment, it will not be financed or built."
-

The Municipality continues to have the following concerns as listed below and reflected in the FEIS.

- Comment 3
- A. The disruption of the Government Hill neighborhood for the Erickson Street cut & cover in Phase I is to construct a 2-lane facility, then at a future date, construct an additional and separate tunnel that has 4-lanes for a total of 6 lanes. The ROW for Phase I is at least 93 feet as illustrated in the FEIS and then an additional 103' for the additional/separate tunnel. What are the options to address the ROW for both tunnels during Phase I, or combine them during one construction activity to limit the further disruption to the community?
-

Comments on the Knik Arm Crossing Final Environmental Impact Statement:

Page 2

B. In response to the MOA's concerns for environmental commitments, mitigation and monitoring, the FEIS states the project will support Context Sensitive Solutions and revitalizing the area. It further states that mitigation actually include the decision to put the facility in a tunnel rather than surface connections and put a lid on the depressed road to address noise and keep traffic below grade, which is been understood as part of this alternate as presented in DEIS. However, in calculating mitigation for the Government Hill neighborhood, the cut-cover design is not considered mitigation and only a commitment by FHWA to advance a project that is at best a compromise for the Government Hill neighborhood. Without a more specific commitment, Anchorage will not support this Record of Decision.

C. The MOA remains strongly opposed to the timetable for the construction of direct connection of the crossing to the Gambell/Ingra travel syste. For the reasons stated in our previous comments, without a concrete commitment to the construction of this route, the community cannot support this project.

D. The MOA continues to question the cost estimate provided in the FEIS. It's clear in response that FHWA and KABATA have sought the expertise of others in confirming the cost of the projects. It is difficult to believe that the project can maintain its previous construction cost estimate from 2005 as illustrated in the FEIS, when our experience is that the cost of road construction has increase about 20% in the last two years. For example, the FEIS maintains that the reconstruction of 9.5 miles of rural road in the Mat-Su and then construct a new road (Northern Access) across the Point McKenzie District to the Mat-Su Port is estimated at construction cost of \$34.2 M, including the contingency of \$7.2M, plus \$5M for design, engineering and construction administration. At \$46.4M for approximately 11.5 miles of road is about \$4M/mile, which seems very optimistic. Likewise, the estimated cost of the bridge crossing and the cut and cover in Government Hills should be reviewed in light of recent construction cost escalation.

E. The projections of population and travel changes as reported in the FEIS claim that by the design year of 2030, an estimated 16,300 people from the Anchorage area will move to the Mat-Su and locate within the "travelshed", an area where most likely travelers will use the bridge from Mat-Su to Anchorage. In addition, the redistribution of population from the Mat-Su population growth from the Palmer and Core area to "travelshed" is reported to be a combined total of 59,000 people. As a comparison, the Chugiak /Eagle River population in 2005 was an estimated 34,100 and continues to grow. To consider that in 20 years a population of regional residents using the bridge will be almost twice that of the existing Chugiak/ Eagle River and using the existing Glenn Highway still remains a difficult concept to support. These assumptions are particularly troubling in light of recent census and Alaska Department of Labor data indicating slower growth rates for the Mat-Su region.

Comments on the Knik Arm Crossing Final Environmental Impact Statement:

Page 3

Comment 8 F. The argument that the bridge supports a reflected forecast of demand and claims to take into account where people want to live and in what kind of housing they want is a skewed argument. When in fact the bridge is necessary to create, more accurately to redirect, the demand in the location that is necessary to support the bridge, its trips and thus its tolls, thus its financial support.

Comment 9 G. In response to MOA comments about the priority ranking of the project, the FEIS cited the AMATS Policy & Procedures for Grandfather Projects. However, the application of the policy was intended to be for those projects, particularly, Non-NHS projects, which AMATS has responsibility to rank and score to support its allocation of the Non-NHS {Surface Transportation Program} Funding. Since the Knik Arm Crossing was never ranked, and its not a Non-NHS project, applying the AMATS Policy and Procedure regarding Grandfathering projects is not appropriate for the Knik Arm Crossing.

The Municipality offers the following edits and clarifications in FEIS.

Comment 10 1. Edit/Clarify the graphic on page S-27, Exhibit S-10 to remove the Degan alignment and the related lands shaded to the north of Government Hill

Comment 11 2. Edit page S-29, Exhibit (S-12) to illustrate a cut and cover facility, with green shade as reflected in the graphic-key/legend, for Phase I on Erickson. The graphic appears to illustrate a trench type facility, which is not the message in the text as to FHWA's intent for a cut and cover on Erickson for both Phase I and Phase II. Review table on page 2-110 that cut and cover tunnel is technically reasonable, and that a cut, no-cover is not technically reasonable.

Comment 12 3. Clarify, page S-55, section 4.7, last bullet, regarding the \$71,000 mitigation through SHPO to MOA for a Historic Plan?

Comment 13 4. Edit, page 2-119, add pedestrian facilities to the graphic cross-section of the proposed facility, as stated in text and illustrate on page S-26, Exhibit S-9.

Comment 14 5. Edit, page 2-122, deleted the word "future" for the path

Comment 15 6. Edit, page 3-46, delete/clarify the last sentence. Clarify that the A/C couplet is recognized as part of the National Highway System (NHS) north of 6th Ave. The reader is lead to believe that the entire length of the A/C couplet is on the NHS, which is not the case

Comment 16 7. Add to FEIS, the reference to AR 2007-46(s), with note that "No construction work will be completed on the Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections and the project design had been submitted for review through the established municipal design process".

**Municipality of Anchorage****MUNICIPAL MANAGER'S OFFICE****RECEIVED**
FEB 19 2008
KABATA**FAX COVER SHEET****DATE:**2/19/08**TO:**Andrew Niemiec*llh***FAX #:**269-6697**FROM:****Office of the Municipal Manager****FAX#:**

(907) 343-7140

PHONE:

(907) 343-7110

TOTAL PAGES:5 (including fax cover)**MESSAGE:**

**MARINE MAMMAL COMMISSION
4340 EAST-WEST HWY., RM. 700
BETHESDA, MD 20814**

**Telephone: (301) 504-0087
Facsimile: (301) 504-0099**

FACSIMILE TRANSMISSION

Date: 2/19/08

Total pages including cover: 10

To: BETTY FAUBER

Fax #: (907) 269-6697

Phone #: _____

From: TIMOTHY RAGEN

Subject: DEIS COMMENTS

Comments: _____

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 700
BETHESDA, MD 20814-4447

19 February 2008

Ms. Betty Fauber
Administrative Director, KABATA
550 West 7th Avenue, Suite 1850
Anchorage, AK 99501

Dear Ms. Fauber:

Comment 1

On 17 November 2006 the Marine Mammal Commission commented on the Knik Arm Crossing Draft Environmental Impact Statement (DEIS) as it pertained to marine mammals that occur in Alaska and that might be affected, directly or indirectly, by the construction and use of the proposed Knik Arm bridge (see attached). The Commission also has reviewed the more recent final environmental impact statement (FEIS) on the proposed bridge and provides the following related recommendations and comments.

RECOMMENDATIONS

The Marine Mammal Commission recommends that—

Comment 2

- the Knik Arm Bridge and Toll Authority and Federal Highway Administration refrain from making any irreversible or irretrievable commitment of resources related to bridge construction until the uncertain but potentially significant impact of bridge construction and use can be evaluated and the Administration can make an affirmative finding that such activities, once mitigated, will not have a more than negligible impact on the Cook Inlet beluga whale stock; and

Comment 3

- in view of the pending proposed rule to list the Cook Inlet beluga whale stock under the Endangered Species Act, the Knik Arm Bridge and Toll Authority initiate, in collaboration with the Federal Highway Administration, a conference with the National Marine Fisheries Service under 50 C.F.R. § 402.10 to evaluate the potential effects of bridge construction and use on this stock.

RATIONALE

The FEIS identifies five marine mammal species that may occur in the project area. However, like the DEIS, it focuses on the Cook Inlet beluga whale stock in its assessment of the possible effects of the proposed bridge construction. This focus is appropriate because beluga whales are the marine mammals most commonly found in the proposed project area. The focus on this stock also is appropriate because it has been designated as depleted under the Marine Mammal Protection Act and has been proposed for listing as endangered under the Endangered Species Act.

Comment 4

Construction and use of the bridge may have a number of adverse effects on the Cook Inlet beluga whale stock. These include disturbance from the noise associated with pile driving and other construction activities. This noise might also mask natural sounds used by beluga whales for

Ms. Betty Fauber
19 February 2008
Page 2

Comment 4 communication, navigation, and predator detection. The disturbance from noise may lead to
Cont. alteration of habitat-use patterns, particularly in the transit corridors into and out of Knik Arm;
changes in the distribution and abundance of prey resulting from changes in bottom topography and
currents in the inlet; increased risk of stranding; disturbance and risks of collisions associated with
increased vessel activity; and disturbance from increased use of the Knik Arm resulting from greater
access to the northwestern shore of the Knik Arm area.

Unmanaged subsistence harvesting contributed significantly to the beluga whale stock's decline prior to 2000. However, the stock has not recovered as expected since the harvest was brought under management. Its failure to recover has not been explained and may reflect the combined influence of multiple risk factors. The best available evidence indicates that the stock is continuing its decline, which suggests that it is not able to tolerate yet another risk factor.

Over the past several decades, managers have repeatedly misjudged the status of this stock and its resilience. Initially, the stock's tolerance for subsistence harvesting was overestimated. Managers then incorrectly assumed that such harvesting was the only factor that needed to be taken into account to bring about recovery. After the stock failed to respond as predicted, managers identified a number of other potential risk factors but, to date, a rigorous research and management program to conserve the stock has not been established. Given the severely reduced state of the stock, we believe it has no tolerance for further misjudgment.

Comment 2 This current situation seems to exemplify the kind of dilemma that Congress sought to
Cont. address in 1972 and 1973 when it passed the Marine Mammal Protection Act and the Endangered Species Act. From an ecological and conservation perspective, the benefits of delay in constructing the bridge far outweigh the costs. A number of the potential risks to the Cook Inlet beluga whale stock are amenable to scientific investigation. If given adequate support, such investigation should reduce the uncertainty regarding potential effects and provide the information needed to devise mitigation measures to ensure that human activities in Cook Inlet have no more than a negligible impact on the stock. The Marine Mammal Commission is in the process of publishing a report on the need for additional research funding for the most endangered marine mammal taxa in U.S. waters, including the Cook Inlet beluga whale stock, and we will forward a copy of the report to you as soon as it is available.

Comment 5 Absent such investigation, any conclusion that construction and operation of the proposed Knik Arm bridge will have a negligible impact on Cook Inlet beluga whales would necessarily be based on speculation, as is evident from the lack of definitive data in both the DEIS and the FEIS. We believe such a conclusion is inconsistent with the requirements of the Marine Mammal Protection Act and would create a substantial risk of extending the pattern of misjudgments about (a) stock status, (b) threat factors, (c) adequacy of research, and (d) adequacy of management measures to ensure recovery.

Comment 2 Loss of this stock would clearly constitute a significant and likely irreversible degradation of
Cont. the Cook Inlet ecosystem. All other beluga stocks in Alaska waters are geographically separated from this region by the Alaska Peninsula, and recolonization could take centuries or more, if it were to

Ms. Betty Fauber
19 February 2008
Page 3

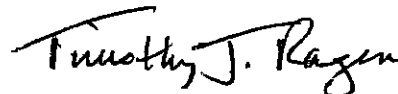
occur at all. At a time when marine mammals in Alaska waters are already vulnerable to multiple adverse effects of human activities, we believe a reasonable measure of caution is needed. For all these reasons, the Marine Mammal Commission recommends that the Knik Arm Bridge and Toll Authority and the Federal Highway Administration refrain from making any irreversible or irretrievable commitment of resources related to bridge construction until the uncertain but potentially significant impacts of bridge construction and use can be evaluated and the Administration can make an affirmative finding that such activities, once mitigated, will not have a more than negligible impact on the Cook Inlet beluga whale stock.

Comment 3
Cont.

In addition, as we have indicated to the National Marine Fisheries Service and others, the Commission believes that the Cook Inlet stock of beluga whales warrants listing under the Endangered Species Act. Based on its rapid decline, small size, failure to recover, and vulnerability to poorly understood and unmanaged or poorly managed risk factors, this stock has an elevated risk of extinction and is in need of the protection provided under the Endangered Species Act. Although the National Marine Fisheries Service has yet to make its final decision on the proposed listing of the stock, publication of the proposed rule is sufficient to trigger the conference requirement set forth under 50 C.F.R. § 402.10, which is designed to help ensure eventual compliance with section 7 of the Endangered Species Act, should the listing be finalized. Such a conference should be designed to provide a more robust framework for evaluating potential effects of bridge construction and use, will help identify key areas of research to characterize risks, and will help identify measures to avoid or minimize those risks. To that end, the Marine Mammal Commission recommends that the Knik Arm Bridge and Toll Authority work with the Federal Highway Administration and initiate a conference with the National Marine Fisheries Service under 50 C.F.R. § 402.10 to evaluate the potential effects of bridge construction and use on this stock.

Please contact me if you have any questions concerning these recommendations and comments.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

Enclosure

cc: Mr. Andrew J. Niemiec, Executive Director, KABATA
Mr. John Lohrey, Field Operations Engineer, FHWA

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

17 November 2006

Ms. Edrie Vinson
Environmental Project Manager
Federal Highway Administration
709 W. 9th Street, Room 851
P.O. Box 21648
Juneau, AK 99802

Dear Ms. Vinson:

The Marine Mammal Commission is an independent federal agency charged with developing, reviewing, and making recommendations on domestic and international actions and policies of all federal agencies with respect to marine mammal protection and conservation. As such, the Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the portions of the Knik Arm Crossing Draft Environmental Impact Statement (DEIS) that pertain to marine mammals and provides the following comments.

The DEIS identifies five marine mammal species that may occur in the project area but focuses on the Cook Inlet beluga whale in its assessment of the possible effects of the proposed bridge construction. This focus is appropriate given the extent to which beluga whales utilize the project area and the status of the Cook Inlet beluga whale stock, which has been designated as depleted under the Marine Mammal Protection Act and which is a candidate for listing under the Endangered Species Act.

The DEIS discusses several possible impacts to beluga whales from bridge construction. These include disturbance from pile driving and other construction activities; masking of natural sounds used by beluga whales for communication, navigation, and predator detection; alteration of habitat-use patterns, particularly in the transit corridors into and out of Knik Arm; changes in the distribution and abundance of prey; increased risks of stranding; disturbance and risks of collisions associated with increased vessel activity; and disturbance from increased use of the Knik Arm area.

Although the DEIS has identified most of the possible sources of impact, by and large, the analyses of those factors largely discount the potential effects on the Cook Inlet beluga whale population. Among the conclusions reached in the DEIS are that—

- beluga whales are likely to continue to transit through the construction area to preferred habitat farther up Knik Arm,
- noise-related disturbance would not be permanent and is not expected to have long-term effects,
- “many” beluga whales would habituate to sound pressure levels of 160-170 dB near the construction site and would not significantly change their behavior or distribution,

Ms. Edrie Vinson
17 November 2006
Page 2

- there is only a "small chance" that the risks of strandings would increase,
- the intermittent nature of the noise from impact pile driving and other construction activities will reduce the importance of masking,
- the frequencies resulting from vibratory pile driving and other activities are above the range used by beluga whales and are unlikely to cause masking,
- beluga whales are habituated to the presence of both large and small vessels, with no apparent adverse effects,
- beluga whales are expected to adapt to vehicular traffic resulting from bridge construction and would continue to frequent the area,
- increased use of the shoreline resulting from the bridge would have no adverse impact on beluga whale behavior in nearshore waters, and
- the proposed mitigation measures will reduce the potential adverse impacts of bridge construction on beluga whales to negligible levels.

Except for a brief acknowledgement in the summary conclusions (pp. 4-310 to 4-312) of possible cumulative effects of bridge construction in combination with other factors, the DEIS does not discuss the potential for these bridge-related activities cumulatively to have significant adverse impacts on beluga whales.

Some of the optimistic conclusions made in the DEIS may stem from a basic misunderstanding of the status of the Cook Inlet beluga whale. On page 3-209, the DEIS notes that the population declined precipitously between 1994 and 1998 but states that "[f]or the past several years the population is thought to have stabilized, with an estimated 300 to 500 beluga whales now inhabit[ing] Cook Inlet." This assessment of the population and its trends is in stark contrast to the conclusions reached in a recent study published by IUCN-The World Conservation Union, which found the population to be "critically endangered" (Lowry et al. 2006).

Using data from the National Marine Fisheries Service's abundance surveys conducted since 1994, the IUCN assessment found there to be a 95 percent probability that the population numbers between 278 and 388 animals and, using the mode of that distribution (329), it estimated that there are only 207 mature individuals in the population. The assessment also found that "the underlying growth rate is so low that there is a 71% probability that if present conditions persist the population cannot withstand any take, and will decline in the future." The assessment concluded that "Cook Inlet belugas face a suite of risks common to small populations, including those related to demographic, environmental, and genetic stochasticity, amplified by the tendency of belugas to return annually to specific areas and to congregate in compact herds." It also noted the limited knowledge of this population's ecology, life history, and reproductive potential, as well as the uncertainty regarding current factors adversely affecting the population and its habitat. All of these findings demonstrate the precarious situation of Cook Inlet beluga whales.

Based on the IUCN assessment, the population's abundance is significantly lower than indicated in the DEIS and has not "stabilized." In fact, the population has declined since 1998 and, in all likelihood, is continuing to decline even without additional stressors such as construction of a

Ms. Edrie Vinson
17 November 2006
Page 3

large bridge in the vicinity of one of the key habitats used by the population. To provide decision-makers with the best possible understanding of the status of this population, it is essential that the DEIS be revised to include the more accurate assessment of population trends in the IUCN study and to incorporate the most recent population estimates resulting from annual surveys conducted by the National Marine Fisheries Service. In this regard, it is expected that the 2006 estimate will be published in the next few months. The analyses also should discuss the existing risks to the beluga whale population in Cook Inlet generally and recognize that any additional perturbations might exacerbate an already dire situation. Until we have a better understanding of the factor or factors that are causing or contributing to the ongoing decline, it is inappropriate to assume that the effects of additional sources of disturbance and habitat modification can be discounted.

The Commission also questions whether the mitigation measures proposed on pages 4-245 and 4-246 of the DEIS will be sufficient to bring the bridge construction project into compliance with the requirements of the Marine Mammal Protection Act. The Commission has addressed these points in separate comments submitted to the National Marine Fisheries Service in response to a 23 August 2006 *Federal Register* notice describing the Knik Arm Bridge and Toll Authority's (the KABATA) request for an incidental take authorization. We enclose a copy of our 22 September 2006 letter so that these points can be considered in the context of the DEIS as well. One of the issues raised in our comments was the need for site-specific information sufficient to predict the reactions of beluga whales at the proposed bridge site and in adjacent areas. KABATA has begun to collect some of the needed information through the one-year study of beluga whale movements in Knik Arm and at the proposed construction site conducted by LGL Alaska Research Associates, Inc., as referenced on page 3-210 of the DEIS (LGL 2006).

Although this is a good start, the Commission questions whether data from a single year are sufficient to draw generally applicable conclusions about beluga whale habitat-use patterns in and around Knik Arm. In addition, at least some of the results of the LGL studies may not be as clear-cut as portrayed in the DEIS. For example, the conclusion that "beluga use of Knik Arm is infrequent during mid-December-March" may be an artifact of several possible biases in the studies. Among other possible explanations for the observed results were that (1) there was less sighting effort at many locations during the winter (none at West Crossing and Fort Richardson; see p. 4-3 of the report), (2) sighting conditions were recorded as being poorer during that period, December-March (see p. 4-9 of the report), (3) sea ice was present during November-February, which likely reduced detection rates (see p. 4-9 of the report), and (4) the surfacing behavior of whales changed beginning in November in such a way that it would likely reduce sighting rates (see p. 5-47 of the report). These factors suggest that the LGL shore-based observations may not provide an unbiased measure of seasonal whale occurrence. Furthermore, figure 4-7 of the LGL report indicates that the mean estimated maximum sighting distances for shore-based observers are in the range of four to five miles. The report does not explain how these distances were determined, but they are at odds with those reported by other observers. Beluga whales more than a mile from the centerline of a transect are hard to detect from an aircraft at an altitude of 1,000 feet. Even at closer distances, detection drops off sharply in conditions of Beaufort 2 or greater (small wavelets) (DeMaster et al. 2000).

Ms. Edrie Vinson
17 November 2006
Page 4

A better indication of beluga whale distribution that is not susceptible to the problems associated with shore-based sighting effort is the satellite tracking data reported by Hobbs et al. (in press). These researchers found that beluga whales use Knik Arm in all months from August through March.

Additional insight into beluga whale distribution and habitat use patterns may be gleaned from another recent study, Goetz et al. (in press). This study, which examined beluga whale habitat-use patterns in Cook Inlet based on proximity to various environmental features, identified all of Knik Arm, including the area around the proposed construction site, as high-use areas.

In light of the biases identified in the LGL report and the other sources of information noted above, the Commission believes that the DEIS places too much faith in these shore-based observations for describing beluga whale distribution and movements within Knik Arm and around the project area. A more complete and up-to-date description is needed.

Specific Comments

Page 3-209, third par. – The final sentence of this paragraph notes that the “Study Area” falls within habitats identified by the National Marine Fisheries Service as “High Value/High Sensitivity” and “High Value.” This discussion should be expanded to explain the features that make this such valuable habitat.

Page 3-211, first par. The final sentence in this paragraph indicates that the Federal Highway Administration is seeking an incidental take authorization from the National Marine Fisheries Service. The placement of this statement here suggests that the take authorization is somehow related to the referenced marine fish and benthos studies or to obtaining fish samples in areas used by beluga whales. Presumably, the DEIS is referencing the authorization being sought for the taking of marine mammals incidental to the construction activities. If so, this needs to be clarified and probably warrants a separate paragraph.

Page 4-240, section 4.8.8.4.1, second par. – This final sentence should be revised to indicate that the Marine Mammal Protection Act prohibits the harassment of all marine mammals, not just beluga whales.

Page 4-240, section 4.8.8.4.1, fourth par. – In the first sentence, the drafters presumably meant that the Southern Alignment bridge is not expected to have adverse effects on harbor porpoises. In addition, as discussed in our comments to the National Marine Fisheries Service on the small-take request, it is not clear that takings would be limited to Level B harassment or that the proposed construction activities would have no effect on beluga whales.

Page 4-240, section 4.8.8.4.2, second par. – Despite this characterization, data presented in the referenced report (see p. 8-11, fig. 8-8) show a substantial amount of observed resting and feeding activity at the two sites closest to the project area. Thus, even if “most” sightings involved animals

Ms. Edrie Vinson
17 November 2006
Page 5

transiting the area, a conclusion that the only impacts would be on beluga whale movements is unwarranted and likely inaccurate.

Page 4-242, third par. – This paragraph concludes that “[d]isplacement of beluga whales by noise...would not be expected to have long-term effects.” Further explanation is needed. This population is small and declining, and it needs to be recognized that a season or two of reduced nutrition/productivity could have serious population-level consequences, even if it resulted in only a small decrease in the number of births that would have occurred otherwise.

Page 4-243, second full par. – This paragraph concludes that there is a “small chance” that belugas could be exposed to greater risks of stranding at low tide. The basis for concluding that the increased risk of strandings is small is not apparent from the discussion and should be provided. In addition, the DEIS should recognize that pile driving and other construction activities also may cause beluga whales to remain longer in deepwater areas than they might otherwise, thereby making them more susceptible to killer whale predation or other hazards.

Page 4-244, first par. – The first sentence states that little is known about beluga whale behavioral responses to pile driving. It would be more accurate to state that nothing about such responses is known.

Pages 4-244-245, carryover par. – The second sentence of this paragraph indicates that repeated exposure to noise associated with construction activities could change beluga whale behavior or distribution but not sufficiently to constitute Level B harassment. If KABATA is suggesting that some types of behavioral changes, particularly those that cause distributional shifts, do not constitute harassment under the Marine Mammal Protection Act’s definition of that term, the basis for that view should be provided. Further in this context, the DEIS should note that the applicable definition merely requires the “potential” for injury or disturbance that causes disruption of behavioral patterns.

Page 4-245, third full par. – This paragraph notes that incidents of beluga whale harassment are rarely reported and likely occur only sporadically. It does not necessarily follow that simply because they are not reported, they do not occur. Also, the logic of the final sentence escapes us. It would seem that incidents of harassment, both intentional and unintentional, would increase as human presence in an area increases, whether such incidents constitute violations of law or not. This is particularly true in an area such as Knik Arm, where access and enforcement capabilities are limited.

Page 4-310, last par., and page 312, first full par. – The DEIS concludes that “[c]umulative effects on one marine mammal, the beluga whale, could be substantial.” Likewise, the DEIS recognizes that the direct and indirect effects of the proposed activities, in combination with the impacts of other actions in the area, “would have an adverse cumulative effect on [the Cook Inlet beluga whale] population.” The Commission agrees with these assessments. Unless and until the impacts on the Cook Inlet beluga whale can be reduced to the point where they would have no more than a negligible impact on the stock, we do not see how an incidental take authorization under section

Ms. Edrie Vinson
17 November 2006
Page 6

101(a)(5) of the Marine Mammal Protection Act can be issued. As such, it is essential that the points raised in this letter and our comments to the National Marine Fisheries Service in the enclosed letter be addressed satisfactorily in both the EIS and in any proposed incidental take authorization.

Please contact me if you have any questions concerning these comments.

Sincerely,



Timothy J. Ragen, Ph.D.
Executive Director

References:

- DeMaster, D. P., L. F. Lowry, K. J. Frost, and J. A. Bengtson. 2000. The effect of sea state on estimates of abundance for beluga whales (*Delphinapterus leucas*) in Norton Sound, Alaska. Fishery Bulletin 99:197-201.
- Goetz, K. T., D. J. Rugh, A. J. Read, and R. C. Hobbs. In press. Habitat Use in a Marine Ecosystem: Beluga Whales in Cook Inlet, Alaska. Marine Ecology Progress Series.
- Hobbs, R., K. L. Laidre, D. J. Vos, B. A. Mahoney, and M. Eagleton. In press. Movements and area use of beluga whale, *Delphinapterus leucas*, in Cook Inlet, Alaska. Arctic.
- LGL Alaska Research Associates Inc. 2006. Baseline studies of beluga whale habitat use in Knik Arm, Upper Cook Inlet, Alaska, July 2004-July 2005.
- Lowry, L., G. O'Corry-Crowe, and D. Goodman. 2006. *Delphinapterus leucas* (Cook Inlet population). In IUCN 2006. 2006 IUCN Red List of Threatened Species.

Enclosure

cc: Mr. Henry Springer, Executive Director, KABATA



GOVERNMENT HILL COMMUNITY COUNCIL

P.O. Box 100018 • Anchorage, Alaska 99510-0018

Julie Jessal, President

Bob French and Dan Lowery, Co-Vice Presidents

Beverly Groskreutz, Secretary-Treasurer

Mike Adams, Mavis Hancock, and Diane Miller, At-Large Board Members

FCC Delegate; Robert Atkinson, Alternate Delegate

Stephanie Kesler, Past President

February 19, 2008

To:

John M. Fowler, Executive Director
Advisory Council on Historic
Preservation
1100 Pennsylvania Avenue NW, Suite
809
Washington, DC 20004

Ms. Judith Bittner
State Historic Preservation Officer
Alaska Office of History and
Archaeology
550 W. 7th Avenue, Suite 1310
Anchorage, AK 99501-3565

Rebecca Logan
Anchorage Historic Properties, Inc.
645 W 3rd Ave
Anchorage, AK 99501

Copies to:

David C. Miller
Federal Highways Administration,
Alaska Division
709 West 9th Street, Rm. 851
P.O. Box 21648
Juneau, AK 99802

Mayor Curt Menard
Matanuska Susitna Borough
350 E. Dahlia Avenue
Palmer, Alaska 99645

Fran Seager-Boss
Alaska Association for Historic
Preservation
645 W. 3rd. Ave
Anchorage, AK 99501

Andrew J. Niemiec
Executive Director
Knik Arm Bridge and Toll Authority
550 West 7th Avenue, Suite 1850
Anchorage, AK 99501

Mayor Mark Begich
Municipality of Anchorage
632 W 6th Ave.
Anchorage, AK 99501

Pam Tesche
Anchorage Commission on Historical
Preservation
632 W 6th Ave.
Anchorage, AK 99501

Subject: Please do not sign the Memorandum of Agreement for Section 106 negotiations under 36 CFR 800.6(c) Regarding the Knik Arm Crossing Project HDP-CA-0001(277)/56047

Dear Consulting Parties and other Signatories:

Comment 1s Government Hill is proud of the fact that we are Anchorage's first and oldest neighborhood, and residents choose to live there because of the people, the historic nature, the relative isolation and the depth of community involvement and community cohesion, all factors that perhaps can be summed up by "Quality of Life". The number of residents who have lived out most of their lives in our small community is remarkable. It is irrefutable that the proposed Knik Arm Crossing will forever and completely destroy that "Quality of Life". It is important to acknowledge that there is no possible mitigation that will change that fact. There are far too many examples of communities that have been ruined by poorly planned projects.

Comment 2s The Government Hill Community Council (GHCC) respectfully requests that you, the signers listed, NOT SIGN the Draft Memorandum of Agreement dated November 28, 2007 (DMOA), or any other Memorandum of Agreement proposed by the Knik Arm Bridge and Toll Authority (KABATA) without our knowledge and concurrence. The Record of Decision for the KAC cannot be completed without a satisfactory MOA. We list the following reasons for this request:

GOVERNMENT HILL COMMUNITY COUNCIL
Established 1915 • Anchorage's First and Oldest Neighborhood

The GHCC, the community most directly affected by the Knik Arm Crossing (KAC), was formally identified as a Consulting Party by Edrie Vinson's (former Environmental Program Manager of the FHWA) letter of September 26, 2006 (see attached), but was summarily excluded from Section 106 consultation since early 2006 by KABATA and the Federal Highway Administration (FHWA) without any notification that they arbitrarily "terminated" the GHCC as a consulting party (refer to page 2 of the June 11, 2007 letter from FHWA to SHPO in Appendix J). The GHCC, as a consulting party, should be a full signatory to any MOA. We have not been asked to participate in any of the Section 106 consultations that took place between October 2006 and the issuance of the FEIS that are documented in Appendix J. We consider this unilateral transfer of our rights under 36 CFR 800 without our knowledge or consent, to be a violation of 36 CFR 800, Section 106 of the National Historic Preservation Act under 16 U.S.C. 470s, and a miscarriage of the National Environmental Policy Act (NEPA) process. GHCC's right to participate in the Section 106 process is supported by the April 19, 2007 letter from SHPO to FHWA, the March 24, 2007 letter from the MOA to FHWA, and by many other comments from a variety of agencies and the public.

There has been no true consultation related to Section 106, the DMOA merely defers the Section 106 consultation to the design phases. There have been some preliminary activities, but no substantive consultations or negotiations with all parties have occurred. One of FHWA's several repeated responses to comments that complain about the effects on historic, cultural and recreational resources is that "Under the Section 106 process, a Memorandum of Agreement (MOA) is being developed to address mitigation for adverse effects." There will not be a valid or legally justifiable MOA without the active, full and substantive participation of GHCC in developing that MOA. The GHCC also supports the stipulation in the March 24, 2007 letter when it states "these mitigation issues must be fully resolved before construction may proceed."

KABATA's Section 4(f) Evaluation admits that the coordination and consultation required by Section 106 for mitigation is incomplete. For example, between the draft and final versions of the Section 4(f) Evaluation KABATA deleted its commitment to determine mitigation before publication of the FEIS, and now suggests that consultation and coordination would "*continue through the final design process.*" (p. 70). The actual effects to historic properties on Government Hill are not yet known, and will not be known until the design for Phase 1 and Phase 2 of the KAC project are complete, (refer to KABATA's response to Comment 298-19: KABATA states "*The extent of adverse impacts to the Government Hill Urban Renewal Historic District will not be known in detail until specific design elements are identified.*") However, the GHCC believes that additional contributing historic elements of the GHURHD as well as the Square & Round Dance Center (S&RDC), Historic element # ANC-1932 as well as the Curling Club, (an important City-wide recreational element) will be required to be destroyed, based on our knowledge of the actual topography, and the facts of large-scale highway construction. Refer to the attached documents and photographs regarding what we believe those future "*specific design elements*" to be. It is our estimate that Phase 1 will cause the demolition or right-of-way acquisition of the properties at 820 E. Loop, 432 Manor, and 433 E Harvard. For Phase 2, we estimate that the properties at 742 Ash St., 621 Vine St. and 675 Birch St which are contributing elements to the Government Hill Urban Renewal Historic District, as well as 711 Ash St., which was not recognized as a contributing element, will be demolished or acquired for right of way.

We believe that the Quonset Hut at 820 E. Loop Road, should have also been considered as a contributing historic element. We believe that Sunset Park should also be recognized as historic. If the 1964 earthquake had happened during a school day, Sunset Park would today be a shrine, an important memorial to the dozens or hundreds of children and their teachers killed there when the school cracked in half.

The demolition of these historic elements by Phase 1 and Phase 2 are not mentioned in the Section 106 narrative, and will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations.

36 CFR 800.8(c) allows the use of the NEPA process for Section 106 purposes under strict requirements (reference <http://www.npi.org/NEPA/rev106.html>). GHCC does not believe that FHWA and KABATA have met those requirements. Specifically, GHCC was not informed in a timely manner that it was a “Consulting Party” under Section 800.3(f), and apparently has been unilaterally terminated as a “Consulting Party” by FHWA and KABATA. We believe that the 8th Whereas in the DMOA is false, as the GHCC has not been allowed to fulfill a substantive role during the EIS process and has not been consulted in accordance with Section 106. See the GHCC November 17, 2006 comments on the DEIS. Refer also to the transcripts in Appendix L, of the various meetings with GHCC to get an idea of the tone of how GHCC was treated by KABATA. The number of non-responses, and no answers will provide at least a taste of how we felt.

We believe that KABATA’s assertion that the noise and visual effects on the GHURHD and other historic elements on Government Hill are “*significantly minimized*” by the Cut and Cover Tunnel listed in the 5th, 6th and 7th Whereas in the DMOA are false. The preliminary drawings showing the right of way (Map 8-P2) show houses being left approximately 30 to 50 feet away from a major 4 lane highway. KABATA indicates in Table 4-31 that the noise and visual impacts will be mitigated by the Cut and Cover Tunnel and by the roadbed being lowered below grade. However, that is not the case at the east end of Sunset Park, for Phase 2, where Figure 4-9 of the FEIS indicates that the highway comes up to grade, in order to provide sufficient height for the viaduct over the Railroad yards. We agree with the Alaska SHPO in their January 18, 2008 comments to the FEIS that “*the visual impacts will not be completely mitigated by the tunnel*”, and that “*noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places.*” We re-emphasize Alaska SHPO’s statement that KABATA and “*FHWA did not adequately address indirect and cumulative impacts.*”

The Key Views shown in figure 3.39, discussed in paragraph 4.6.3.2.1, and summarized in Table 4-34 give an incorrect indication of the changes in visual quality. Particularly the discussion of Key View 7 does not discuss that trucks and cars that will be clearly visible at an on-grade roadbed, nor do they discuss the fences that are necessary where any highway cuts directly through a residential neighborhood. That discussion states “*The Erickson Alternative would have a major effect on the visual quality represented in this view.*” This is in conflict with Table 4-34 which states that the change in visual quality for Key View 7 would only change from “*Moderate to High*” to “*Moderate*”. KABATA has also not addressed the visual impacts of Phase 2 on historic and cultural resources on the rest of the historical resources on Government Hill, or in Downtown, or Mountain View.

While KABATA states in Table 4-31 that Noise impacts will not exceed FHWA abatement criteria, it is hard to believe that an at-grade, 4 lane highway, 50 feet from your house would have acceptable noise levels in any neighborhood. To believe otherwise indicates a lack of “quality time” spent next to highways! It is significant that Table 4-31 indicates a 5 dBA increase at Birch St. and Sunset Dr. from 59 to 64 dBA, but only a 2 dBA increase approximately 80 feet away at Birch & Vine. It is also significant to note that KABATA actually evaluated the existing sound levels at 8 sites, and estimated the existing sound levels at the other 8 sites. Government Hill estimates that the actual sound levels at the east end of Sunset Park will be similar to the existing sound levels at Ingraham & 3rd Ave. or A St. & 3rd Ave. at 67 and 66 dBA, which would be above the noise abatement criteria of 65 dBA. KABATA also did not state what would happen when the actual noise levels are in excess of the FHWA abatement criteria. What mitigation will be conducted? KABATA needs to commit to actual mitigation, such as retrofitting adjacent houses to protect the residents from high noise levels when they occur.

KABATA and FHWA assert that the Cut and Cover Tunnel is an important mitigation measure, and we admit that it is superior to an entirely at-grade connection. However, it is important to note that KABATA proposes to dig up and rip apart the Government Hill neighborhood not just once, but twice. Refer to the following statement from page S-8 of the FEIS Summary. “*Moreover, based on constructability or project economics, certain elements from Phase 2 (e.g. initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1.*” The multi-year impacts of a construction

Comment 10s
continued

project of this scale will bankrupt the businesses, and drive a significant number of residents to leave, not just those who have their homes and businesses directly taken by KABATA. It is absolutely unacceptable to have those impacts take place during Phase 1, and then to have them again take place again several years later. The entire Cut and Cover Tunnel **MUST** take place in Phase 1 if this bridge will be built. KABATA must not be allowed to exhume the body to violate it again during Phase 2.

Comment 11s

The DMOA fails to describe actual, concrete mitigation for how the loss of important contributing elements will be compensated. We agree with the Alaska SHPO in their January 18, 2008 comments to the FEIS that *"Simply documenting the destroyed buildings, offering to sell the impacted buildings and supplying a very nominal amount of planning money does not appropriately compensate for the loss of an entire streetscape of an important historic district."*

The demolition of some of the many historic properties on Government Hill will not be mitigated by the \$71,000 proposed in the DMOA. That GHCC would be "bought off" for such a sum is a violation of the principals of NEPA and the National Historic Preservation Act. The mitigation requirements outlined in the GHCC PowerPoint Presentation that was shown at the initial meeting of the Context Sensitive Solution workshops in December 2005 (starting on page 591 of Appendix L) will form a starting point for actual Section 106 consultation. We further emphasize that the historical mitigation not be mixed into the mitigation or reimbursement for the private, commercial, residential property "taken" for this project, or for the reimbursement for businesses that are put out of business by this project. GHCC believes that the *"\$1 million for historic preservation in the Matanuska Susitna Borough and \$1 million for historic preservation in Anchorage and funding the Anchorage Historic Preservation Officer position for three years to administer this fund"* (listed in the January 18, 2008 letter from SHPO) may be a starting point for just the historical mitigation, but as KABATA often states, *"Under the Section 106 process, a Memorandum of Agreement (MOA) is being developed to address mitigation for adverse effects."*

Comment 3s
continued

KABATA admitted in their response to Comment 14-4 that the June 26, 2006 letter to SHPO stating that *"The Government Hill Community Council declined to participate in the initial consultation"* was incorrect. FHWA's statement in Comment 14-4 that *"FHWA continues to welcome your continued participation"* has not been borne out by KABATA's or FHWA's actions. As stated above, we have had no contact from FHWA since December 2006, with little contact between December 2005 and December 2006. Refer to Comment 112-9. With FHWA's admission that their June 26, 2006 letter was incorrect, we also ask that FHWA review their statement in the April 30, 2007 "Section 106 Consulting Parties Position Summaries" on page 1, that on *"March 17, 2005, Section 106 consultation was formally initiated with letters to Government Hill Community Council..."*. GHCC cannot find a copy of that letter, and it was not enclosed as stated in this "chronology".

GHCC would like to object to the statement on page 1 of the June 11, 2007 letter from FHWA to SHPO that *"1. Consulting parties have been and continue to be involved in discussions of development of mitigative measures."* The GHCC, an important consulting party has not been invited to participate in any Section 106 issues since early 2006. The GHCC letter of November 5, 2006 (page 273 of Appendix J) to FHWA indicates that we were awaiting being invited to CSS sessions, and the FHWA December 19, 2006 response indicates that GHCC was not being invited to the Section 106 consultations that are documented in Appendix J.

Comment 12s

We would like to answer the question posed by the Alaska SHPO in their January 18, 2008 comments to the FEIS: *"Are there design alternatives that still must be considered?"* GHCC feels that two important alternates that would have far less impact to historic and cultural resources (that are supposedly protected by Section 106) that have not received adequate consideration: The Boniface Alternative which was rejected by the Scoping Summary Report, but was the preferred alternative in the 1984 DEIS for the Knik Arm Crossing; and the Anchorage Access Solution (AAS) that came out of the initial CSS meeting in Dec 2005. As stated in GHCC's extensive November 17, 2006 comments on the DEIS, the AAS was grossly misrepresented by KABATA in the

Comment 12s
continued

DEIS and FEIS. The Phase 2 variant crossing at Elm Street is just one of many possible Phase 2 alternates, including some that closely resemble Phase 2 for the Degan variant. The GHCC pointed out to KABATA and FHWA prior to issuance of the DEIS that they were misrepresenting the AAS, but were completely ignored. The release of the DEIS served as our "response". Phase 1 of the AAS had no impacts to Historic Properties protected by Section 106 and Parks protected by Section 4(f). If a Degan-like variant for Phase 2 was selected, it would have fewer impacts on Section 106 and 4(f) cultural resources, with a minor compromise. Namely the curves necessary from Government Hill to the Viaduct over the Railroad Yards to Ingra/Gambell would need to be at a tighter radius than a 50 MPH design speed. However, Phase 2 would be similar to the speeds for Phase 1, which are limited to 35 MPH at Loop Road and the A/C Couplet Bridge. KABATA had a nominal response to Comment 291-42, only stating that their design criteria for new construction was followed, and acknowledging that 35 MPH for existing elements was OK. We do not believe that a reduction in speed to 35 MPH in the last mile of a 30 mile crossing would result in any significant loss in commuting time.

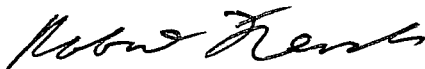
Comment 13ns

Government Hill Community Council appreciates the addition of the Advisory Council on Historic Preservation to the consulting parties for the Section 106 negotiations. We hope that this brief summary of our most prominent objections to the failures of the Final Environmental Impact Statement for the Knik Arm Crossing, and of the Draft Memorandum of Agreement proposed by KABATA and FHWA will help to provide a bit of insight into the serious procedural and factual problems in these documents.

Comment 12s
continued

We conclude this summary with the following comment taken from the Municipality of Anchorage's November 17, 2006 comments on the DEIS. *"Lack of Alternatives: The three alternatives presented for public review do not provide the Municipality or the public an adequate range of options to consider. The description of the Degan and Erickson alternatives as different and distinct is not convincing. These two routes are virtually identical in terms of every key impact on the affected neighborhoods and the entire Anchorage community. Offering these as the only "build" alternatives leads the public to believe FHWA has either predetermined the exact route of the project or is trying to create a fatal process flaw designed to derail the project. Both of those outcomes are unacceptable."* The FEIS is fatally flawed.

Sincerely Yours,



Bob French, Co-Vice President
Government Hill Community Council

Cc: Assemblyman Tesche
Native Village of Eklutna
Knik Tribal Council
National Park Service
Historic 4 Community Councils
Senator Ellis
Representative Dahlstrom
Representative Gara

Impacts to additional Historic and Recreational Elements.

It is important to note that the right of way and project foot-prints shown for the Degan Variant (that was rejected), and the Erickson Variant are different. This is shown clearly on Figures 4.23 and 4.24 in the FEIS. It may also be useful to review Figures 2.34 and 2.36 showing the typical cross section of Loop Road, and of the Erickson Tunnel. You are encouraged to review those figures (not included here to keep down file size) along with these comments.

It is our estimate, and that of Civil Engineers working on similar designs and of actual construction of similar projects, that both Phase 1 and Phase 2 will not be able to be built as shown on the preliminary design drawings. We feel that the Phase 1 work will impact both the Curling Club, and the Alaska Railroad Employee Recreation Center (Square & Round Dance Center, or S&RDC which is Historic element # ANC-1932). We feel that the Phase 2 work will cause the demolition of an additional 3 houses which are contributing elements to the Government Hill Urban Renewal Historic District.

Here is an aerial view from Google Earth that shows the existing Loop Road, and how close the Curling Club and S&RDC are to Loop Road. Note that North is to the left in this and following views.



For Phase 1, we believe that the revised layout along Loop Road shown on the preliminary design drawings cannot economically be constructed without directly impacting both the Curling Club, and S&RDC. That is because of the degree of cut necessary on the north side of Loop Road, and the amount of fill and retaining wall necessary at the Alaska Railroad yard necessary to avoid impacting AKRR

operations. Refer to Figure 2.34 from the FEIS, which states that it is for the Degan Variant, but will be wider for the Erickson Variant due to the separation of the on and off ramps and the sidewalk.

The FEIS in Map 8-P1 on page S-29 shows the preliminary design as the approach road comes out of the Erickson Tunnel and transitions to Loop Road. The following is an enlargement of Map 8-P1, and also points out some of the key limiting factors shown in the photos. The light tan colored areas are listed in the Legend as Cut/Fill areas.



Page 2-126 states that the Erickson Variant would have a 50 MPH design speed. That is not true for Phase 1, Loop Drive has a posted speed limit of 35 MPH. The existing Loop Road, is a 4 lane road, and in the vicinity of “Curling Club Curve”, is actually reverse graded, i.e. the road slants to the outside of the curve. This causes numerous accidents both during the winter and summer months. As shown above, Phase 1 for the “Curling Club Curve” actually includes more of a curve than the existing Loop Road, but maintains about the same radius. The elements shown here include 2 traffic lanes, 2 on, and off ramps, and a new sidewalk. Based on Figure 2.36 of the FEIS, it is assumed that the new “Curling Club Curve” will be correctly graded, so that the inside of the curve is lower than the outside.

Loop Drive in this area makes the transition from a lower elevation to the “Top” of Government Hill. The AKRR Engine shop at the lower right hand side in the enlargement above is about 100 feet lower than Harvard Avenue, and the Square & Round Dance Center is about midway between them.

Here are some photographs of the elements shown above.



The corner of Curling Club right now is less than 10 feet from the edge of the existing sidewalk.



Here it is from the South



The Square & Round Dance Center is about 30 feet from the existing sidewalk.



This view looks at the cross-section by the Square & Round Dance Center.



Here is the embankment above the AKRR Engine Shop.



Here is the existing retaining wall cutting into the sidewalk opposite the AKRR Engine Shop.

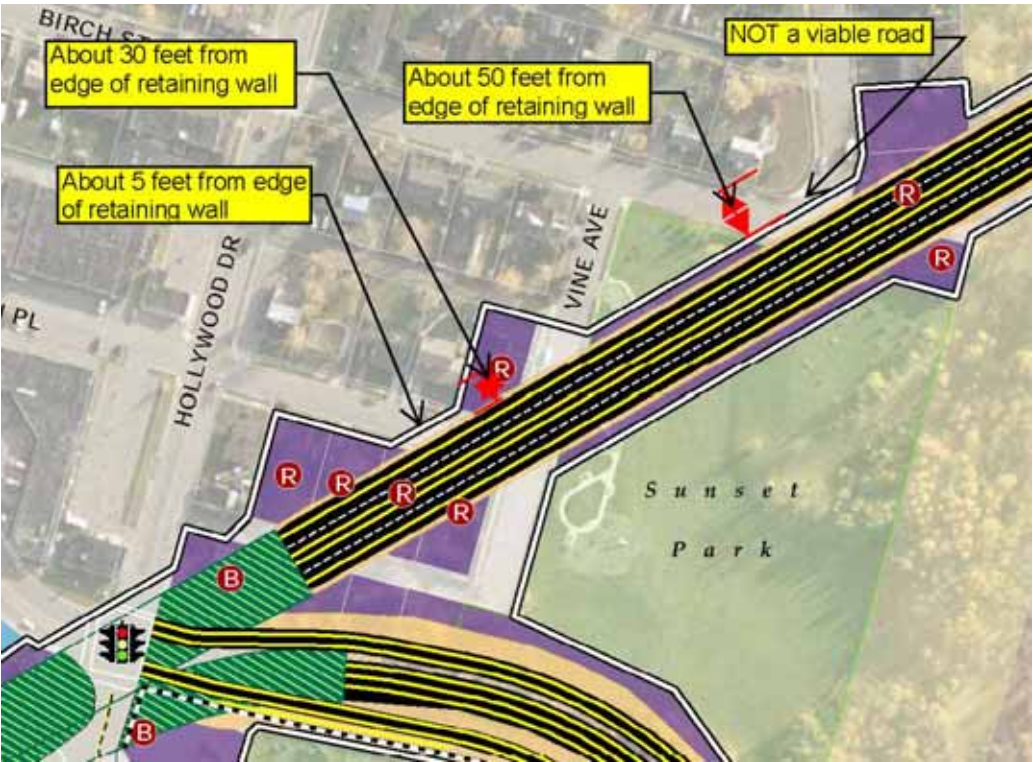
These above photos show that in order to create the cut, and fill sections necessary for a properly graded curve, there will need to be large retaining walls both above Loop Road in Harvard Park, and below, in the Alaska Railroad operations area. Due to the essential nature of the AKRR operations, and KABATA’s stated intent to not disturb those operation or of the cost of demolishing and relocating the AKRR Engine Shop, GHCC believes that KABATA will choose to instead demolish the S&RDC, and the Curling Club in order to fit the various design elements into the space available.

The demolition of the Historic S&RDC building by Phase 1 is not mentioned in the Section 106 narrative, and will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations. The rebuilding of a similar structure in another to replace the recreation facilities which exist nowhere else in Anchorage, that will be lost due to this demolition will need to be resolved, mitigated and fully addressed by the Section 4(f) negotiations and consultations

The demolition of the Curling Club, an important recreation facility that exists nowhere else in Anchorage and is used by athletes from around the state, will require rebuilding of a similar structure in another location to replace the lost recreation facilities, as noted by the Municipality of Anchorage in their March 24, 2007 letter to FHWA, which states: “Replacement strategies must include facilities as well as land area – and serve existing user populations”. GHCC supports the other Municipality of Anchorage requirements for 4(f) mitigation in that letter, including that the “cost of these municipal processes (in addition to acquisition, construction and other mitigation costs) must be funded as part of the Knik Arm Crossing Project.”

For both Phase 1 and Phase 2, GHCC believes that cost factors associated with the Tunnel construction will cause KABATA to demolish or acquire for right of way, additional contributing historic elements.

The FEIS in Map 8-P2 on page S-31 shows the preliminary design as the approach road comes out of the Phase 2 Erickson Tunnel and raises up to cross Sunset Park. The following is an enlargement.



The tunnel under Government Hill is estimated to be at least 25 feet and possibly 30 feet below grade, due to the necessity of maintaining utilities from the east side to the west side of Government Hill, and still having adequate clearance. Figure 2.36 indicates a 10 foot setback from the edge of the concrete walls of the tunnel to the edge a sheet pile wall, and another 10 feet to the edge of the right of way. Working within driven sheet pile walls only 10 feet from the right of way will cause much higher (from 1.5 to 2 times as high) costs than conventional construction without sheet piles. The number and type of utilities that cross through the area of the Erickson Tunnel including a 24" reinforced concrete sewer main, multiple water lines, natural gas lines, overhead power lines, abandoned utilities (this is Anchorage's first neighborhood) and fiberoptic cables that enable phone and internet connections for about half of Alaska, the concept of working inside sheet pile walls quickly becomes cost prohibitive. Those costs are driven higher because of the contaminated soils due to leaks from the former Defense Fuels site, leaks from the Defense Fuels pipeline, and asbestos, lead paint and fuel oil contamination at Sunset Park, at the former location of the Government Hill Elementary School that was destroyed by the 1964 earthquake. Some of those haz-mat costs were not identified in the FEIS.

Due to KABATA's self-imposed requirement to keep the costs under \$600 million for Phase 1, we believe that KABATA will be forced to cut costs wherever they can, and that will cause them to use conventional excavation for this tunnel. Utilizing conventional construction, the set-backs for a 30 foot deep tunnel in unconsolidated sand and gravel would be about 60 feet from the bottom toe of the slope. This is why the Set-backs for the Right of Way, and of the project footprint were shown as being larger for the Degan Variant than the Erickson Variant. It is one way how KABATA had their thumb on the scale when measuring the differences between their two, nearly identical, variants.

It is our estimate that this will cause the demolition or right-of-way acquisition during Phase 1 of the properties at 820 E. Loop, 432 Manor, and 433 E Harvard. We believe that the Quonset Hut at 820 E. Loop road, should have also been considered as a contributing historic element.

For Phase 2, we estimate that the properties at 742 Ash St., 621 Vine St. and 675 Birch St which are contributing elements to the Government Hill Urban Renewal Historic District, as well as 711 Ash St., which was not recognized as a contributing element, will be demolished or acquired for right of way.

The demolition of the these historic elements by Phase 1 and Phase 2 is not mentioned in the Section 106 narrative, and will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations.



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
ALASKA DIVISION**

709 West Ninth Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802
907-586-7418 | 907-586-7420 FAX

September 26, 2006

REFER TO
HDA-AK

File #: File #: 0001(277)56047

Ms. Stephanie Kessler
Government Hill Community Council
P.O. Box 100018
Anchorage, Alaska 99510

SUBJECT: Knik Arm Crossing Project, Request for Consultation to resolve Adverse Effects,
pursuant to 36 CFR 800.6(a)

Dear Ms. Kessler:

The Alaska Department of Transportation and Public Facilities (DOT&PF), in cooperation with the Federal Highway Administration (FHWA) and Knik Arm Bridge and Toll Authority (KABATA), is proposing to construct a new bridge to span Knik Arm, connecting the Municipality of Anchorage and the Matanuska-Susitna Borough, including adequate connections to existing committed roadway networks.

Pursuant to 36 CFR 800.4(d)(2), implementing regulations of Section 106 of the National Historic Preservation Act, the FHWA finds that historic properties would be adversely affected by the proposed project: the Degan Street Alternative would have an adverse effect on ANC-01931, the Anchorage Square and Round Dance Club Building; and the Erickson Street Alternative would have an adverse effect on the Urban Renewal Historic District by directly affecting three contributing properties ANC-01878, ANC-01880, and at a site not yet numbered in the Alaska Heritage Resource Survey database at 710 and 730 Ash, and 601 Vine in Anchorage. The State Historic Preservation Office concurred with this finding in July 13, 2006. Accordingly, the FHWA would like to continue consultation with the State Historic Preservation Office and consulting parties, to develop a Memorandum of Agreement (MOA) to mitigate adverse effects associated with the proposed action.

A meeting has been proposed to initiate this process, occurring ***October 10, 2006, at 1:30pm at the Atwood Building, Room 1310 in Anchorage.*** At your earliest convenience, please advise us of your interest to participate in consultation for the resolution of adverse effects, and confirm whether or not you or your staff will be able to attend the October meeting.



If you have questions or comments, please contact me directly at the address above, by telephone at 907-586-7464, or by e-mail at edrie.vinson@fhwa.dot.gov.

Sincerely,



Edrie Vinson
Environmental Program Manager

Enclosures: July 14, 2006 correspondence Judith Bittner to Edrie Vinson
July 13, 2006 correspondence Judith Bittner to Edrie Vinson
June 23, 2006 correspondence Edrie Vinson to Judith Bittner

cc: Dale Paulson, KABATA
Laurie Mulcahy, DOT&PF HQ Environmental Project Manager

*Step
Please appoint
a representative who
lives in the Urban Renewal
Historic District & joins
in the discussion.
Thanks EV*



GOVERNMENT HILL COMMUNITY COUNCIL

P.O. Box 100018 • Anchorage, Alaska 99510-0018

Julie Jessal, President

Bob French and Dan Lowery, Co-Vice Presidents

Beverly Groskreutz, Secretary-Treasurer

Mike Adams, Mavis Hancock, and Diane Miller, At-Large Board Members

FCC Delegate; Robert Atkinson, Alternate Delegate

Stephanie Kesler, Past President

February 19, 2008

Subject: Government Hill's remarks regarding FEIS comment responses.

Government Hill respectfully submits the following remarks in response to selected published comments and responses in Appendix K of the FEIS.

Comment 14s

A/C Couplet Bridge: Comment 291-31 - A/C Couplet Bridge does not have seismic capacity to provide access to KAC for evacuation.

The response to comment 291-31 included the following:

Travel demand analysis has been conducted and it has been determined that the A-C Couplet has adequate capacity to handle traffic volumes from the Knik Arm Crossing project until approximately 2023 at which time the Ingra-Gambell connection could be constructed to tie in with the Highway-to-Highway project proposed by AMATS. It is estimated that approximately two-thirds of the travel demand will shift to the Ingra Gambell Couplet once constructed.

This response directly contradicts DOT/PF's assessment of the A/C Couplet Bridge which is listed as "functionally obsolete", and it is also on DOT/PF's 2007 Bridge Inventory list as one of only 3 bridges in the state with the comment of "Fracture Critical", meaning that it requires special inspections to ensure that it does not collapse. Contrary to the Purpose and Needs Statement, the A-C Couplet Bridge is not a reliable "redundant route".

Comment 15s

Funding and Construction: Comment 295-49 – No construction should be done until all bridge-related funding is secured.

Government Hill and other organizations asserted:

... that the bridge and its access roads should not be constructed until all bridge-related funding has been secured. If this is not done, there will be needless, adverse environmental and social impacts and community costs associated with a bridge that might never be completed.

The FEIS response included the following:

GOVERNMENT HILL COMMUNITY COUNCIL

Established 1915 • Anchorage's First and Oldest Neighborhood

Comment 15s
continued

Determining financial feasibility entails determining the costs to construct, operate and maintain the project on the costs side and determining the forecast traffic and toll revenue on the revenue side of the equation. These elements are then used to determine the cash flow generated in order to determine its sufficiency to support project financing. KABATA has hired numerous highly respected independent experts to determine these various elements and to assist it in determining the financial feasibility of the Knik Arm Crossing. The following provides a brief history of the financial feasibility work that has been performed...

The response is a justification of the [highly suspect] financial feasibility analysis. The response fails to address the underlying issue of adverse social, environmental, and community costs that will be incurred if bridge construction is started but not completed.

In a letter dated March 24, 2007 to David Miller of FHWA from Mary Jane Michael, Executive Director of the Municipality of Anchorage's Office of Economic and Community Development, Ms. Michael stated that the MOA's Long Range Transportation Plan was amended to include language prohibiting construction on the Anchorage landside until the complete funding package is secured and the access connections and project design have been submitted for review to the Municipality of Anchorage.

The excerpt is below:

Finally, the Anchorage Assembly and Mayor Begich, which together hold three of the five member positions on the Anchorage Metropolitan Area Transportation Study group (AMATS), recently supported a key amendment to Assembly Ordinance 2007-46 (S), to include the Knik Arm Crossing in MOA's Long Range Transportation Plan (LRTP), which added the following language:

D. No construction work will begin on Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections and the project design had been submitted for review through the established municipal design review process.

Based on this recent pronouncement by MOA decision makers, we expect that these mitigation issues must be fully resolved before construction may proceed. We look forward to working with you to address these major concerns.

Obviously, construction of Anchorage landside approaches are prohibited until the complete funding package is in place.

Anchorage Access Solution

The Anchorage Access Solution (ASS) is a proposal resulting from the initial Context Sensitive Design meetings held in December 2005. As pointed out in our comments throughout Appendix K in the FEIS, KABATA and FHWA grossly misrepresented our proposed solution. The Phase 2 crossing at Elm Street was just one of *many* possible Phase 2 routes including some that *closely* resemble the Phase 2 Degan Street Variant. We have strenuously objected to the misrepresentation of the AAS as demonstrated by our comments throughout Appendix K.

GOVERNMENT HILL COMMUNITY COUNCIL
Established 1915 • Anchorage's First and *Oldest* Neighborhood

Comment 16s

Comment 16s
continued

Phase 1 of the AAS was demonstrated to be both less expensive than the Degan and Erickson Alternatives and has far fewer impacts to historic properties protected by Section 106 and parks protected by Section 4(f). If a Degan-like variant was selected for Phase 2, the variant would have fewer impacts on Section 106 and 4(f) resources. A minor compromise would be required: the curves from Government Hill to the viaduct would be at tight radius that prohibits a 50 mph design speed. However, those speeds would be similar to the Phase I 35 mph loop road and A/C Couplet Bridge speeds.

Several AAS design elements are superior to the Degan-Erickson alternatives. Intersections occur on flat ground north of Government Hill Elementary School as opposed to the middle of icy and steep “Curling Club Curve”. Also, currently Loop road is a four lane road. The Erickson Variant converts Loop road to a two lane road with on and off ramps which will force both Government Hill and Elmendorf traffic on to a single ramp.

Comment 17s

TeamBuildingInitiative: 291-4

From Section 1.4 of the Knik Arm Crossing Report on pages 1-3:

Because the proposed Knik Arm Crossing project was deemed nationally significant, FHWA selected it for participation in the NEPA TeamBuilding Initiative. The goal of this FHWA initiative is to improve the quality and timeliness of transportation development projects while ensuring stewardship of the human and natural environment. In addition, the TeamBuilding Initiative aims to assess potentially controversial impacts early in the NEPA process; use conflict-resolution techniques; build public trust through an effective public involvement process; identify opportunities to integrate innovative technology and data tools; and improve documentation of impacts from the proposed project and records.

Our comments and the official response in regards to the TeamBuilding Initiative:

Comment: 291-4

Government Hill firmly believes that if the stakeholders had been allowed to follow the TeamBuilding Initiative, reviewing reasonable alternatives in good faith, the resulting DEIS may have been a strong document that could have received broad support. Instead, the DEIS is fatally flawed.

Response:

The Knik Arm Crossing Draft EIS was conducted in accordance with the National Environmental Policy Act (NEPA) and 36 CFR 800, Protection of Historic Properties. The consultation process is ongoing through the Final EIS. The Interdisciplinary Team was established specifically for environmental resource and regulatory agencies, and local governmental officials. A concurrent public involvement process was established that included outreach to the general public, group meetings, community council

GOVERNMENT HILL COMMUNITY COUNCIL

Established 1915 • Anchorage's First and Oldest Neighborhood

Comment 17s
continued

meetings, public scoping meetings, public workshops, and newsletters. In addition, 14 separate meetings were held with the GHCC or its representatives during the Draft EIS process.

As a result of the scoping process, reasonable alternatives were identified and brought forward for study in the Draft EIS, including the Anchorage Access Solution. The Anchorage Access Solution was refined in consultation with the GHCC Steering Committee. The resulting alternative, the Elm Street Alternative, was determined by FHWA to not be reasonable. The results of the Elm Street Alternative analysis are contained in Section 2.5.4.3.

The above response does not address the total failure to adhere to the guidelines established by the TeamBuilding Initiative. There are several TeamBuilding Initiative comments in Appendix K of the FEIS. Not a single response addresses the issue. Every response consists of the stock language used above.



GOVERNMENT HILL COMMUNITY COUNCIL

P.O. Box 100018 • Anchorage, Alaska 99510-0018

Julie Jessal, President

Bob French and Dan Lowery, Co-Vice Presidents

Beverly Groskreutz, Secretary-Treasurer

Mike Adams, Mavis Hancock, and Diane Miller, At-Large Board Members

FCC Delegate; Robert Atkinson, Alternate Delegate

Stephanie Kesler, Past President

February 19, 2008

Subject: Supplemental Government Hill Remarks Regarding the FEIS.

Comment 18s

Purpose and Need Criterion Shortfalls:

The Bridge as described in the FEIS fails to meet requirements delineated in item 3 of the primary "Purpose and Needs". It does not meet Criterion P&N-2, P&N-3, P&N-4, and it does not provide:

...transportation system redundancy for alternative travel routing and access between regional airports; ports; hospitals; and fire, police, and disaster relief services for emergency response and evacuation.

The following quote (with emphasis added) from page 5 of KABATA's 2007 Annual Report indicates a major retreat from one of the key components of the so-called Phase 2 expansion:

The majority of the project would be a minimum of one-lane in each direction to start with, and engineered to easily expand in the future. On opening day the project would connect into the Anchorage network via the A/C Couplet. When traffic increases, toll revenue could help finance an extension to the Ingra/Gambell Couplet and add through-lanes

KABATA has repeatedly asserted that toll revenues will finance both operations and maintenance costs, as well as the eventual construction in Phase 2 of the 4 lane bridge and connecting roads needed to make the KAC effective.

Thus KABATA's preferred alternate has described in the FEIS and KABATA's 2007 Annual Report, does not meet Criterion P&N-2:

Would be financially feasible, based on the ability to finance a total estimated project cost not-to-exceed \$600 million (this criterion is for initial construction costs of the facility, Phase 1, and does not include ultimate build-out capacity that would be funded through toll-backed financing).

It also does not meet Criterion P&N-3:

GOVERNMENT HILL COMMUNITY COUNCIL

Established 1915 • Anchorage's First and Oldest Neighborhood

Comment 18s
continued

Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs".

We agree with the Municipality of Anchorage when they said in their Comments to the DEIS:

Our analysis projects a daily volume of 160-480 gravel-haul trucks based on the DEIS information, in addition to other tractor-trailer trucks from the Bridge through our Downtown District. This is detrimental to the Municipality. Moreover, projected traffic volumes on the proposed Phase I connector alternatives via the A/C Couplet are unworkable. Our analysis indicates the A/C Couplet Viaduct over Ship Creek will be over capacity and dysfunctional well before projected in the DEIS.

Because of these unacceptable effects on the connecting transportation networks, KABATA's preferred alternate does not meet Criterion P&N-4:

Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered.

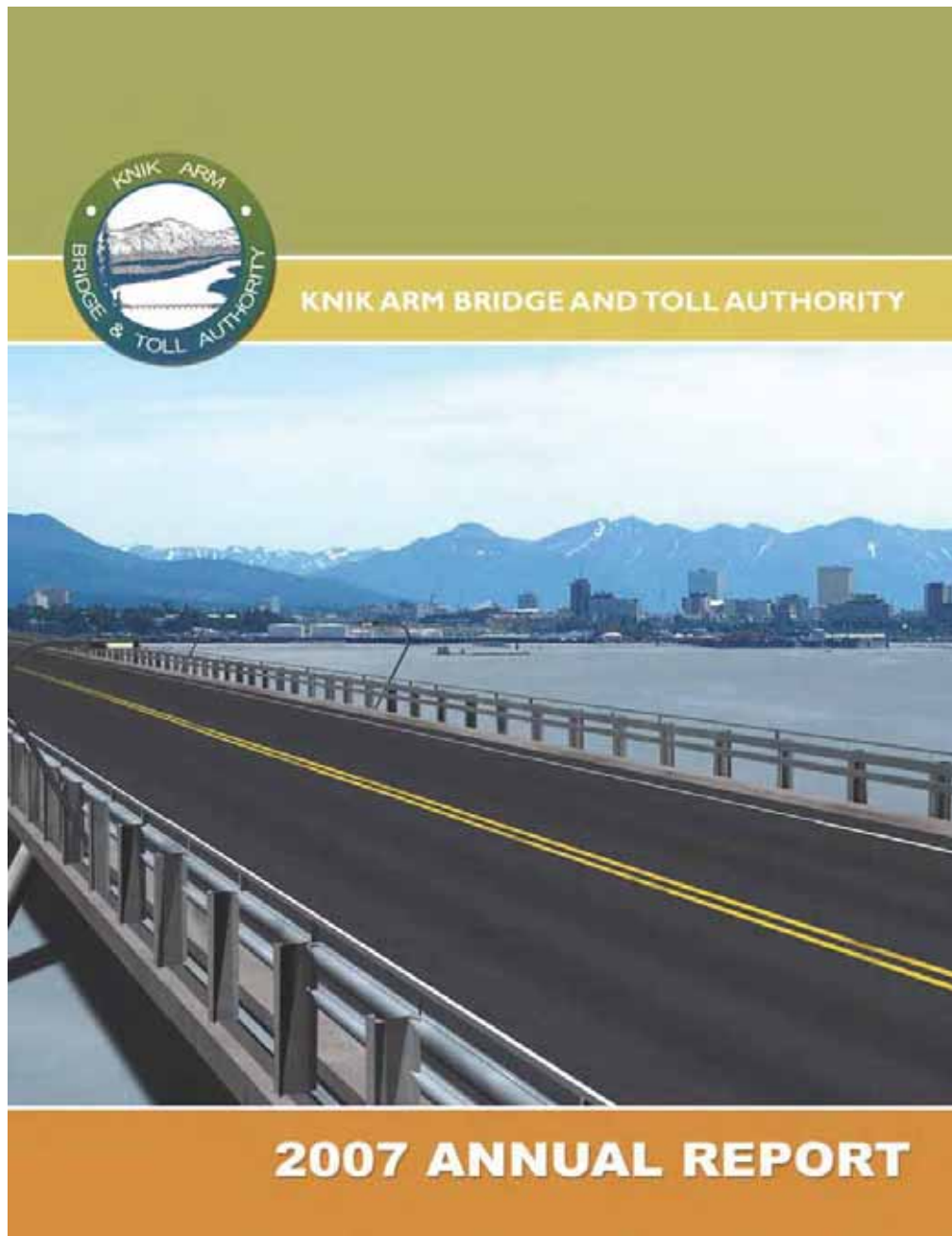
The Government Hill Community Council supports the comments on the FEIS by Trustees for Alaska, the Alaska Public Interest Group, the Alaska Transportation Priorities Project and others that comment on the critical shortcomings of the Purpose and Needs.

Comment 19s

Bridge Design Fails Basic Functionality and Safety Requirements:

KABATA's 2007 Annual Report prominently displays the picture below:

Comment 19s
continued



The bridge is depicted as two lanes lacking any sort of pullout. The Knik River bridge on the Glen Highway also was originally a two lane bridge. It experienced major problems with ice fog due to the open water and cold temperatures. It was also the site of many accidents until the second bridge was built, special lights installed, and turned into a fully divided 4 lane highway, which has lessened the number of crashes. If the Knik Arm Crossing is built as a two lane bridge, one can only imagine the results of a multi-car crash in the middle of the bridge due to ice fog and zero visibility on a 1.5 mile long bridge over open water in freezing conditions. It will take hours, if not days, to clear out the wreckage. That is not an "effective" road.

GOVERNMENT HILL COMMUNITY COUNCIL
Established 1915 • Anchorage's First and *Oldest* Neighborhood

Comment 20s

Fiber Optic Cables on Government Hill:

KABATA's states on page 4-86 of the FEIS that there are no known major communication lines in the Anchorage portion of the KAC project. That is false. During the CSS discussions in December 2005, with Government Hill Community Council, GHCC informed KABATA that a critical high capacity fiber optic cable carrying at least half of the instate and out of state communications for ALL of Alaska will be crossed by either the Degan or Erickson Tunnels.

Comment 21s

Hazardous Materials:

The discussion in 4.5.4.3 of hazardous materials sites in the Government Hill neighborhood are missing several known haz-mat sites. This includes the following: that OT92 extends to Site 99, and would be impacted by the Erickson Tunnel. Site 99, the former Defense Fuels site had the buried tanks removed, but the foundations for those tanks remain, which will cause much high costs when digging the trench for the Erickson Tunnel. Sunset Park is the former location of Government Hill, and as a school built in the 1950's was full of asbestos and lead-based paint, as well as having buried underground fuel tanks. We regularly find pieces of the school coming up through the grass in Sunset Park and are confident that excavations for the Erickson Tunnel will be impacted by those hazardous materials.

Comment 22s

Cumulative Impacts:

GHCC agrees with comments 274-6, 274-7, 274-8, 274-18 and 274-9 among others that the EIS is deficient with regards to direct, indirect and cumulative impacts of the KAC. The FEIS needs to include a more thorough discussion of alternatives that would avoid or minimize impacts to Section 106, 4(f), fish, wildlife, wetland trust resources, marine mammals, and other cultural and recreational resources. In particular, no specifics are given on actual mortality due to direct, indirect and cumulative impacts. Also, the summary of impacts shown in the FEIS summary minimizes the impacts.

Comment 23s

Beluga Whales:

The Government Hill Community Council supports the comments on the FEIS by Defenders of Wildlife, the Marine Mammal Commission, NOAA, Trustees for Alaska, and others that identify various shortcomings in the discussion of impacts to Cook Inlet beluga whales. Among the problems identified in these comments, the discussion of impacts to the beluga whale understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale population to extinction. E.g., NOAA, Comments on the Knik Arm Crossing Draft EIS 2 (Nov. 17, 2006). The EIS, as a result, violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the bridge. E.g., Ctr. for Biological Diversity, 508 F.3d at 526-27."

Comment 24s

In Support of other Comments Regarding Lack of Alternative Evaluation:

Government Hill Community Council agrees with the EPA in Comments 313-3, 313-4, 313-13, 313-14, the Matanuska Susitna Borough, the Municipality of Anchorage, the Corps of Engineers in comments 293-2, 293-4 and the Alaska SHPO that the FEIS has not explored and evaluated additional or true alternatives that would avoid or minimize environmental impacts.



GOVERNMENT HILL COMMUNITY COUNCIL

P.O. Box 100018 • Anchorage, Alaska 99510-0018

Julie Jessal, President

Bob French and Dan Lowery, Co-Vice Presidents

Beverly Groskreutz, Secretary-Treasurer

Mike Adams, Mavis Hancock, and Diane Miller, At-Large Board Members

FCC Delegate; Robert Atkinson, Alternate Delegate

Stephanie Kesler, Past President

February 19, 2008

Response to *Final Section 4(f) Evaluation*

This letter is in response to KABATA's release of the *Final Section 4(f) Evaluation* of the proposed Knik Arm Crossing. KABATA's interpretation of Section 4(f) and its analysis of alternatives are

Comment 25s incorrect and insufficient, and do not meet the legal requirements of NEPA, Section 106 of the National Historic Preservation Act, or Section 4(f) the Department of Transportation Act of 1966. KABATA's conclusions are incorrect because it failed to carry forward alternatives that would not impact 4(f) resources. The process is insufficient because the Section 106 and Section 4(f) consultation is nowhere

Comment 26s close to being concluded, and because it still fails to address comments submitted by GHCC in response
Comment 27s to the DIES, specifically, GHCC comments 291-49 to 291-63.

(Continuing) Problems with the Alternatives Analysis

Comment 25s continued

The first problem is that KABATA has failed to propose, adequately develop, or carry forward alternatives that would avoid adverse Section 4(f) impacts. To avoid a true alternatives analysis, KABATA narrowly defines its purpose and need (including the arbitrary \$600 million price tag) and adopts arbitrary interpretations of "prudent and feasible" KABATA admits that both the Degan and Erickson routes would adversely impact parks and historic resources. Thus, GHCC renews its objection, echoed by many others in comments to the DIES, to KABATA's characterization of the Degan and Erickson routes as actual "alternatives", they are mere variants. Courts also have recognized that "[a]n alternative route which uses any part of a park is not an alternative to use of the park." Until KABATA stops calling these routes "alternatives" and brings forward and develops alternatives that do not impact Section 4(f) resources, no true Section 4(f) analysis can occur.

Courts have held that "[t]he mere fact that a 'need' for a highway has been 'established' does not prove that not to build the highway would be 'imprudent'" GHCC continues to disagree that there is no "prudent and feasible" alternative that would entirely avoid Section 4(f) properties. Several of the alternatives dismissed by KABATA in Table 4-2 as too costly or disruptive to choose or even to carry forward such as Boniface, West Bluff, and one variant of the Anchorage Access Solution would have negligible or no impacts on Parks and historic sites. Along the same lines, KABATA overuses the "unique problem/truly unusual factor" reasoning. Under KABATA's explanation in Table 4-2, "unique and usual" factors that disqualified particular alternatives include such mundane and common issues as "substantial military impacts" (whatever that means), "moving security gate," "high cost," and the highly speculative "more likely to lead to ultimate closure of both bases." This type of sloppy reasoning is not consistent with court decisions holding that factors such as cost, directness of route, and community disruption cannot be viewed as "unique" problems. If Congress had intended these factors to be on an equal footing with the preservation of parkland there would have been no need for section 4(f). Thus, we renew specific disagreements with these conclusions that we and others lodged during

GOVERNMENT HILL COMMUNITY COUNCIL

Established 1915 • Anchorage's First and Oldest Neighborhood

Comment 25s the DEIS process because we see nothing here in the final EIS that shows those objections were
continued considered in anything other than a pro forma manner.

We will, however, take the time to reiterate our earlier comments, not responded to in the FIES, that the Anchorage Access Solution generated by the initial CSS meeting in Dec 2005 was grossly misrepresented by KABATA in the DEIS and FEIS. The Phase 2 variant crossing at Elm Street is just one of many possible Phase 2 alternates, including some that closely resemble Phase 2 for the Degan variant. The GHCC pointed out to KABATA and FHWA prior to issuance of the DEIS that they were misrepresenting the AAS, but we were completely ignored. Phase 1 of the AAS actually has far fewer impacts to Historic Properties protected by Section 106 and Parks protected by Section 4(f). If a Degan-like variant for Phase 2 was selected, it would have fewer impacts on Section 106 and 4(f) cultural resources, with a minor compromise, namely the curves necessary from Government Hill to the Viaduct over the Railroad Yards to Ingra/Gambell would need to be at a tighter radius than a 50 MPH design speed.

Comment 26s **Problems with the Process**
continued

The evaluation cannot be considered complete or sufficient until all consulting parties and KABATA have agreed on the scope of the impacts of all alternatives, and (if protected resources are to be taken) reached agreements on mitigation measures. Neither of these steps has been taken.

The *4(f) Evaluation* admits that the coordination and consultation required by Section 106 for mitigation is incomplete. For example, between the draft and final versions of the *Section 4(f) Evaluation* KABATA deleted its commitment to determine mitigation before publication of the FEIS, and now suggests that consultation and coordination would “continue through the final design process.” (p. 70). In its response to Comment 298-19, KABATA states “The extent of adverse impacts to the Government Hill Urban Renewal Historic District will not be known in detail until specific design elements are identified.” For comments 298-19 to 298-23, KABATA again states that it will not know the actual extent of the adverse impacts, and again merely repeats that it is developing a Memorandum of Agreement, but has no specificity of the actual mitigation that will occur. Correspondence between KABATA/FHWA and the MOA and SHPO, including correspondence exchanged following publication of the Draft EIS, shows that the consultation process has barely started, with the final evaluation failing to list a single mitigation measure agreed to by either of these two consulting parties. Under these circumstances, the entire mitigation discussion starting on page 69 and continuing to page 78 should be viewed as nothing more than a series of one-sided negotiating gambits that KABATA hopes might be mistaken for a true consultation process.

The *Final Section 4(f) Evaluation* incorrectly states that “[c]onsultation is ongoing” with the Government Hill Community Council (p. 69). In fact, KABATA has not worked with GHCC since early 2006, and the last exchange of emails in January and February of 2006 and letters in November and December 2006 (attached to FEIS) showed GHCC pleading with KABATA/FHWA to return to the table, an invitation that FHWA and KABATA have steadfastly refused to accept for the past 2 years. And yet, KABATA now proposes “to undertake further Context Sensitive Solutions workshop efforts with the Government Hill Community” during the final design effort! (p. 71). Under these circumstances, the proposal to allow KABATA to move forward before consulting with GHCC would be the functional equivalent of locking the barn door after all the cows have left. After-the-fact

Comment 26s continued workshops cannot satisfy federal requirements to consult and to minimize harm. KABATA must be required to conclude the consultation process before FHWA issues its ROD. The GHCC agrees with US Dept of Interior in Comment 274-1 [*“We recommend that the Federal Highway Administration (FHWA) and the Knik Arm Bridge and Toll Authority (KABATA) continue their efforts to develop measures amenable to the Municipality of Anchorage and Government Hill community to mitigate the effects of the Degan and Erickson Alternatives on Section 4(f) resources and the community as a whole.”*]] and looks forward to that process concluding before any ROD is issued and before the project moves forward.

Finally, KABATA has neglected over the past year to consult with the Anchorage Historic Preservation Commission. AHPC was created in January of 2007 to serve as the historic preservation review commission for the purpose of maintaining the municipality as a certified local government, and to serve as the local historical district commission for the municipality under AS 29.55 and AS 45.98. AHPC has significant expertise and legal responsibilities with respect to historic properties in Anchorage and recently voted to request designation as a consulting party for purposes of complying with Section 106 of the National Historic Preservation Act, and that it be an invited signatory to any MOAs developed under Section 106.

Comment 28s **Problems with the Proposals**

KABATA suggests that taking 0.8 acre of Sunset Park during Phase I will not seriously impact its use; however, the ROW acquisition would remove the tree buffers and part of the mown playing field. (p. 32). The conclusion seems incorrect, as anyone who has used a park knows that removing vegetative buffer between the road and the park increases noise, smell, and negative visual impact, making the park experience less enjoyable.

Comment 29s Next, KABATA proposes to reclassify the remnant of Sunset Park as “Mini Park,” despite problems with access and parking (p.75). How can that be called mitigation? KABATA further proposes to investigate whether Cunningham Park could be expanded into an area smaller than the 1-acre minimum for “mini parks” in Anchorage. (p. 75). Creating a discontinuous scrap of land and calling it an amenity is not mitigation. The same problem applies to the proposal to investigate creating “discontinuous patches” of land on top of the tunnel lid (p. 76).: Small and discontinuous patches of land are not very functional and certainly can’t make up for loss of community parks.

Comment 30s GHCC questions the conclusion that the Greenbelt is not subject to Section 4(f) protection. The greenbelt is a functionally important part of both Sunset and Harvard Parks, in that it serves as a sight, sound and smell buffer between road traffic and parkland. It is also, as the MOA has pointed out, important to the neighborhood. The greenbelt creates a sense of peace, privacy, and self-containment that is a hallmark of our neighborhood.

Comment 31s Next, GHCC and Civil Engineers working on similar designs and actual construction of similar projects believe that both Phase 1 and Phase 2 will not be able to be built as shown on the preliminary design drawings. We believe that the Phase 1 work will impact both the Curling Club and the Alaska Railroad Employee Recreation Center (Square & Round Dance Center, or S&RDC which is Historic element # ANC-1932). We feel that the Phase 2 work will cause the demolition of an additional 3 houses that are contributing elements to the Government Hill Urban Renewal Historic District. These conclusions are

Comment 31s explained more fully in the Appendix to the Section 106 comments. These probable impacts need to be documented and mitigated before the project can move forward.

Comment 32s The mitigation negotiations for Section 4(f) adverse affects have barely started. From the correspondence in Appendix J related to Section 4(f) resources, it is clear that the mitigation discussions are not complete. KABATA discusses moving picnic tables, and creating parking lots, but fails to commit to the actual mitigation requirements of the Municipality, such as replacing affected facilities, like the Square & Round Dance Center, and the Curling Club. We agree with the February 1, 2006 letter that states that Sunset Park will be wholly impacted. However, the FEIS summary says that Sunset will be only partially impacted. This is typical of the inconsistencies in the FEIS.

GHCC agrees with the Municipality of Anchorage in their March 24, 2007 letter when it states: *“We believe that the proposed mitigation measures are not adequate to maintain Government Hill community cohesion or the integrity of its parks, and that other alternatives need to be seriously considered as required by the EIS process.”*

That letter further states *“any land lost from Harvard or Sunset Parks will be detrimental to the community and should be replaced with land of the equivalent size and usefulness, and equivalent connection to and accessibility by the neighborhood. Both current citywide and neighborhood uses should be factored into mitigation strategies, as well as the mitigation’s impact on low-income and minority residents. Replacement strategies must include facilities as well as land area – and serve existing user populations.”*

That letter further states *“We also believe it is necessary to work closely with the Government Hill Community to determine what combination of additional areas as well as enhancement or improvements in remaining park and green belt areas might provide adequate for the Degan or Erickson Alternative.”* The GHCC protests that FHWA has refused to include Government Hill Community Council in the Section 4(f) negotiations.

The GHCC supports the Municipality of Anchorage in their March 24, 2007 letter when it states *“One significant measure that should be included in the mitigation process is the purchase of existing deteriorated properties in the business district for the development of a neighborhood business center.”* It was pointed out in GHCC’s DEIS comments that all of the businesses in the GH business district will likely be bankrupted during the construction process. It is also pointed out that one of the benefits of the Anchorage Access Solution is that those “indirectly impacted” (and minority owned) businesses that would otherwise not be compensated for their losses, would be fully compensated if the Anchorage Access Solution was implemented.

The GHCC also supports the stipulation in the Municipality’s March 24, 2007 letter when it states *“these mitigation issues must be fully resolved before construction may proceed.”*

TRUSTEES FOR ALASKA

A Nonprofit Public Interest Law Firm Providing Counsel to Protect and Sustain Alaska's Environment

1026 W. 4th Ave., Suite 201 Anchorage, AK 99501 (907) 276-4244 (907) 276-7110 Fax Email: ecolaw@trustees.org
Web address: www.trustees.org

February 19, 2008

Betty Fauber
Administrative Director
Knik Arm Bridge and Toll Authority
550 W. 7th Avenue, Suite 1850
Anchorage, AK 99501

Re: Knik Arm Crossing Final Environmental Impact Statement

Dear Ms. Fauber:

We submit these comments on the Knik Arm Crossing Final Environmental Impact Statement ("EIS") on behalf of the Alaska Center for the Environment ("ACE"), Alaska Public Interest Research Group, Alaska Transportation Priorities Project, Anchorage Citizens Coalition, Cook Inletkeeper, Government Hill Community Council, and North Gulf Oceanic Society. Like the draft EIS, the final EIS falls short of the requirements of the National Environmental Policy Act ("NEPA"). The Federal Highway Administration ("FHWA") has not satisfactorily addressed the comments on the draft EIS submitted by ACE *et al.*, the Government Hill Community Council, and various agencies and local governments. We thus incorporate these comments herein by reference.¹ Moreover, the EIS shows that this costly and environmentally harmful project would reduce travel time for only 20% of the residents of the Upper Cook Inlet region, would increase average travel time and distance in the region, and would not spur economic growth. Finally, the bridge is ineligible for funding under the Federal Aid Highway Act ("FAHA"). In sum, the EIS not only falls short of NEPA and the FAHA, but the bridge would not meet the needs of the Upper Cook Inlet region, and we thus urge the FHWA to select the No Action Alternative.

I. The FHWA Defines the Purpose and Need for the Proposed Action in Unreasonably Narrow Terms That Foreclose Consideration of a Reasonable Range of Alternatives.

comment 1r The EIS fails to provide the reasonable range of alternatives that NEPA requires. The purpose and need statement eliminates all action alternatives other than an 8,200-foot roadway bridge over Knik Arm, FHWA, *EIS* § 2.8 (Dec. 2008), making it impossible to assess the true merits and impacts of the proposed bridge. The FHWA does this even though Congress has abandoned the bridge for all intents and purposes. The comments on the draft EIS by ACE *et al.* note that the FHWA adopted a purpose and need statement that requires a bridge over Knik Arm even though Congress rejected such a limitation by deleting the earmarks for the bridge and appropriating the funds to "any purpose eligible under section 133(b) of title 23, United States

¹ These include the comments on the draft EIS by ACE *et al.*, the Municipality of Anchorage, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the U.S. Marine Mammal Commission, National Oceanic and Atmospheric Administration, and the Government Hill Community Council.

comment 1r
continued

Code.” Pub. L. No. 109-115, § 186, 119 Stat. 2396, 2431 (2005). An agency must “consider the views of Congress” when preparing a purpose and need statement. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991). In response to this comment, the FHWA acknowledges that Congress decided to “let the State of Alaska determine” what to do with the money, but the FHWA declines to revise the purpose and need statement. FHWA, *EIS* app. K (comment 295-20) (Dec. 2007).

The purpose and need statement provides as follows (footnotes included):

The proposed project would further the development of transportation systems in the Upper Cook Inlet region by providing improved vehicular access and surface transportation connectivity between Anchorage and the Mat-Su through the Port MacKenzie District, with a financially feasible² and efficient³ crossing to meet the needs for:

1. Improved regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in AS § 19.75
 2. Regional transportation connectivity for the movement of people and the movement of freight and goods to, from, and between Anchorage, the Mat-Su, and Interior Alaska
 3. Safety and transportation system redundancy for alternative travel routing and access between regional airports; ports; hospitals; and fire, police, and disaster relief services for emergency response and evacuation[.]
-

comment 2r

Id. at § 1.3. The comments on the draft EIS by ACE *et al.* identify language in this statement that requires a Knik Arm bridge. In addition to this language, the requirement that the project improve “regional transportation infrastructure to meet . . . locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in AS § 19.75” prevents non-bridge alternatives from being considered in the EIS. Specifically, the EIS states that the “plans” cited by the FHWA “have identified needs that can be met by an efficient and financially feasible Knik Arm crossing, specifically document support for a crossing, or list such a crossing as a major development to be considered for long-range planning purposes.” *Id.* at 1-10. Moreover, AS 19.75 establishes the Knik Arm Bridge and Toll Authority (“KABATA”) expressly to construct “a bridge to span Knik Arm.” In other words, the purpose and need statement can only be satisfied by a single action alternative: An 8,200-foot bridge over Knik Arm.

The FHWA has abused its discretion by adopting an unreasonably narrow purpose and need statement. While an agency has discretion to define the purpose and need, “this discretion is not

² Financial feasibility is based on the ability to finance a total estimated project cost not-to-exceed \$600 million.

³ *Efficient* means a measure of traffic operating conditions that occurs when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered.

unlimited.” *Westlands Water Dist. v. U.S. Dep’t of Interior*, 376 F.3d 853, 866 (9th Cir. 2004). “[A]n agency cannot define its objectives in unreasonably narrow terms,” *City of Carmel-by-the-Sea v. U.S. Dep’t of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997), “contriv[ing] a purpose so slender as to define competing ‘reasonable alternatives’ out of consideration (and even out of existence).” *Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 666 (7th Cir. 1997). *See also Davis v. Mineta*, 302 F.3d 1104, 1118-20 (10th Cir. 2002). The FHWA has done this here.

The FHWA dismisses the concerns expressed by ACE *et al.* about the purpose and need statement and its effects on the range of alternatives by declaring that the purpose and need statement “provide[s] the flexibility for consideration of a large range of alternatives including roadway, non-roadway, and multimodal alternatives including expanded ferry and rail.” *E.g., id.* at app. K (comment 295-19). Notwithstanding this declaration, the FHWA employs the purpose and need statement to eliminate all non-bridge alternatives from the EIS.⁴ *Id.* at § 2.8.

The FHWA accomplishes this by applying the following purpose and need screening “criteria” (footnotes included) to the alternatives:

Criterion P&N-1 Would further development of transportation systems in the Upper Cook Inlet region by providing improved vehicular access and surface transportation connectivity between Anchorage and the Mat-Su at the Port MacKenzie District

Criterion P&N-2 Would be financially feasible⁵, based on the ability to finance a total estimated project cost not-to-exceed \$600 million (this criterion is for initial construction costs of the facility, Phase 1, and does not include ultimate build-out capacity that would be funded [at least in part]⁶ through toll-backed financing)

Criterion P&N-3 Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs

Criterion P&N-4 Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered

⁴ In response to the comments of ACE *et al.* on the purpose and need statement and range of alternatives, the FHWA appears to abandon its efforts to justify the range of alternatives in the EIS, declaring that the draft EIS complies with NEPA, that many state and local plans call for a Knik Arm bridge, and that the bridge underwent extensive scoping. *Id.* at app. K (comment 295-26). This declaration does not justify the range of alternatives in the EIS.

⁵ As part of the Scoping process, initial Rough-Order-of-Magnitude (ROM) construction cost estimates were prepared as a basis for preliminary corridor and corridor variant evaluations. Once reasonable alternatives were identified, additional refinement and cost and impact evaluations were performed, including cost estimates for controlled access right-of-way, preliminary engineering, construction administration, and contingencies. Due to the evolving process of alternatives development, early construction cost estimates prepared as part of the Scoping process are not readily comparable to later phase comprehensive cost evaluations.

⁶ “When traffic increases, toll revenue *could help finance* an extension to the Ingra/Gambell couplet and add through-lanes.” KABATA, 2007 Annual Report 5 (Dec. 2007) (emphasis added).

- Criterion P&N-5** Would further regional transportation infrastructure to meet existing and projected population growth
- Criterion P&N-6** Would further regional transportation infrastructure in response to locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in Alaska Statutes chapter 19.75
- Criterion P&N-7** Would further regional transportation connectivity for the movement of people to and from—and distribution between—Anchorage, the Mat-Su, and Interior Alaska
- Criterion P&N-8** Would further regional transportation connectivity for the movement of freight and goods to and from—and distribution between—Anchorage, the Mat-Su, and Interior Alaska
- Criterion P&N-9** Would improve safety and provide transportation system redundancy for alternative travel routing and access for emergency response and evacuation⁷

Id. at § 2.2.1; FHWA, *Scoping Summary Report* 6-4 (Nov. 2005). “Alternatives had to meet all of the applicable criteria to be considered reasonable.” FHWA, *EIS* at 2-2; FHWA, *Scoping Summary Report* at 6-4. Based on these criteria, and without credible analysis, the FHWA eliminates all non-bridge alternatives, including the following, from the EIS:

- Expandable commuter ferry
- Rail bridge across Knik Arm
- Commuter rail to Wasilla
- “Transportation Package” (multimodal alternative)⁸ consisting of:
 - regular car ferry transit to Point MacKenzie
 - commuter rail between the Mat-Su and Anchorage
 - carpool and vanpool incentives for travel between the Mat-Su and Anchorage
 - expanded bus service and streetcar transit in Anchorage

FHWA, *Scoping Summary Report* at § 6.3; FHWA, *EIS* at § 2.5.2.

Four examples typify the problems with the development and application of the purpose and need screening criteria. First, the FHWA eliminates various alternatives under Criterion P&N-2

⁷ The Glenn and Seward Highway corridors provide the sole north-south ingress and egress routes between the Mat-Su, Anchorage, and other communities south of Anchorage. In the event of a natural disaster or accident, overland connections within and access to the region’s airports, ports, hospitals, and other emergency services would be severely limited.

⁸ FHWA developed and evaluated the “Transportation Package” at the request of seven nongovernmental organizations (NGOs) that the Study Team analyze a four-part “Transportation Package” multimodal alternative. This alternative is described in Section 2.5.2.4 and more fully discussed in the *Scoping Summary Report: Comments, Issues, and Alternatives* (FHWA 2005a).

comment 3s
continued

while failing to adequately consider whether the proposed bridge meets this criterion. Specifically, the EIS eliminates various alternatives that would cost over \$600 million, but approves an 8,200-foot bridge over Knik Arm because it would cost under \$600 million. FHWA, *EIS* at tbl. 2-7, tbl. 2-9. The approval of the bridge under this criterion contradicts various studies the FHWA omits from the EIS. For example, the FHWA omits its own study indicating the bridge would cost \$639 million. FHWA *et al.*, *Cost Estimate Review Study* 4-5 (June 2006). Additionally, the FHWA omits the contemporaneous KABATA financial plan showing that the “initial construction costs” of the bridge would be \$587 million in addition to \$45 million for “development phase activities,” for a total of \$632 million, and that “total estimated project cost” – with debt service, bond issuance, and other transaction costs – would be \$845 million. KABATA, *TIFIA Application* § D at 2 (June 2007). The failure of the FHWA to disclose and consider all information about the costs of the proposed bridge in applying Criterion P&N-2 is arbitrary and capricious and violates NEPA. *E.g.*, 40 C.F.R. §§ 1502.14, 1502.24; *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

comment 4s

Second, the FHWA applies many of the criteria without defining essential terms and without credible methodology. For example, under Criterion P&N-3, the FHWA imposes a higher standard on non-bridge alternatives than bridge alternatives. Specifically, the *Scoping Summary Report* and the EIS indicate that the ferry alternative – and, as a result, the multimodal alternative – is not “sustainable” because its revenue would not cover operation and maintenance, overhaul and maintenance, administrative, insurance, capital, and other costs of the ferry five years after start-up. FHWA, *Scoping Summary Report* at 6-40. In contrast, the FHWA finds that the bridge alternatives are “sustainable” because they cover operation and maintenance costs *in the year 2030*. *Id.* at § 6.8.3. Moreover, the EIS defines “efficient” in Criterion P&N-4 as “a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered.” FHWA, *EIS* at § 2.2.1. Rather than systematically apply the factors in this definition, the FHWA simply eliminates alternatives that would take longer to cross Knik Arm than a Knik Arm bridge. FHWA, *Scoping Summary Report* at § 6.8.1; FHWA, *EIS* at § 2.5.2. In short, the FHWA applies the purpose and need criteria inconsistently and incredibly to the alternatives, which is arbitrary and capricious and violates NEPA. *E.g.*, 40 C.F.R. §§ 1502.14, 1502.24; *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

comment 5s

Third, the FHWA eliminates non-bridge alternatives under Criterion P&N-5 based on their inability to meet “population growth” that would occur *only* if KABATA builds the bridge. The FHWA estimates that a bridge would “generate about 45,900 trips per day” in the year 2039. FHWA, *Scoping Summary Report* at 6-41; FHWA, *EIS* at § 2.5.2. While the FHWA never reveals the source of this estimate, a report prepared at the time of the *Scoping Summary Report* – but left out of the report and the EIS – projects a similar number of trips across the bridge. *See* Wilbur Smith Associates, *Knik Arm Bridge Preliminary Traffic and Toll Revenue Study* tbl. 2 (Nov. 2005) (estimating 42,000 daily trips across a Knik Arm bridge in 2039). More importantly, the report projects *only 6,100 trips* across Knik Arm in 2039 if KABATA does not build the bridge. *Id.* at tbl. 3. In other words, the demand estimates for the proposed Knik Arm bridge are inapplicable to the non-bridge alternatives because they project demand many times higher than the non-bridge alternatives would have to accommodate. The FHWA ignores this problem, however, and applies the higher bridge demand to eliminate three of the four non-

comment 5s
continued

bridge alternatives. FHWA, *Scoping Summary Report* at § 6.8.1; FHWA, *EIS* at tbl. 2-7, § 2.5.2. The FHWA has thus failed to articulate a “rational connection between the facts found and the conclusions made” in violation of NEPA. *E.g.*, *Midwater Trawlers Co-op v. U.S. Dep’t of Commerce*, 282 F.3d 710, 716 (9th Cir. 2002).

comment 6r

Fourth, the EIS provides no basis for Criterion P&N-9. Criterion P&N-9 requires the alternatives to “improve safety and provide transportation system redundancy for alternative travel routing and access for emergency response and evacuation.” FHWA, *EIS* at 2-3. The footnote to this criterion provides – without support – that “[i]n the event of a natural disaster or accident, overland connections within and access to the region’s airports, ports, hospitals, and other emergency services would be severely limited.” *Id.* As the comments on the draft EIS by ACE *et al.* indicate, “the FHWA fails to demonstrate any shortcomings in the present or future capacity of the regional transportation system to handle ‘[s]afety’ or ‘emergency response and evacuation’ needs now or in the future, choosing instead to speculate about hypothetical shortcomings in the capacity of the system to handle hypothetical future disasters.” The FHWA has not corrected this failure in the EIS. Consequently, Criterion P&N-9 is not a reasonable basis to eliminate non-bridge alternatives, as the FHWA does in the EIS. *Id.* at tbl. 2-7; *Westlands*, 376 F.3d at 866 (“Courts evaluate a Statement of Purpose and Need under a reasonableness standard.”) (citing *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1066-67 (9th Cir.1998)); *Midwater Trawlers Co-op*, 282 F.3d at 716.

comment 7ns

These examples are not meant to identify all of the problems with the purpose and need statement and range of alternatives in the EIS. Instead, they typify the problems with the EIS. It is axiomatic that NEPA requires the FHWA to demonstrate a “rational connection between the facts found and the conclusions made.” *E.g.*, *Midwater Trawlers Co-op*, 282 F.3d at 716. Federal courts will scrutinize purpose and need statements to determine whether they articulate legitimate needs and provide for a reasonable range of alternatives. *E.g.*, *Citizens Against Burlington*, 938 F.2d at 196; *City of Carmel-by-the-Sea*, 123 F.3d at 1155; *Westlands*, 376 F.3d at 866. Federal courts will also scrutinize the alternatives screening process and the resulting range of alternatives. *E.g.*, *California v. Block*, 690 F.2d 753, 766 (9th Cir. 1982); *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 813-15 (9th Cir. 1999); *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992); *Methow Valley Citizens Council v. Reg’l Forester*, 833 F.2d 810, 815-16 (9th Cir. 1987), *rev’d on other grounds*, *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). If a purpose and need statement, alternatives screening process, or range of alternatives fails to provide a rational connection between the facts found and conclusions made, or otherwise eliminates or omits reasonable alternatives, the EIS violates NEPA. *E.g.*, *Idaho Conservation League*, 956 F.2d at 1519-20. This EIS has precisely these problems, and we thus urge the FHWA to select the No Action Alternative.

comment 8s

We further urge the FHWA to select the No Action Alternative because, as a policy matter as well as a NEPA matter, there is no need for the bridge. The EIS incorrectly depicts the boundary at which people would save travel time to Anchorage – the metric the FHWA adopts to measure the benefits of the bridge – so as to suggest that most of Wasilla would save time traveling to Anchorage by using the bridge. *Compare* FHWA, *EIS* at 3-1, fig. 3.1, *with* KABATA, *Land Use*

comment 8s
continued

and *Transportation Forecasting Technical Report* 6 (Feb. 2006).⁹ This contradicts the information in the *Land Use and Transportation Forecasting Technical Report*, which indicates the bridge would reduce travel time to Anchorage only for people south and west of Wasilla. KABATA, *Land Use and Transportation Forecasting Technical Report* at 6; FHWA, *EIS* at app. K (comment number 295-23). Since only 20% of people in the Upper Cook Inlet region would live in this area in 2030 if the bridge is not built, the bridge would not reduce travel time to Anchorage for 80% of the people in the region. See FHWA, *EIS* at tbl. 4-1 (projecting that 549,200 people will live in the Upper Cook Inlet region in 2030, with 111,400 of them in areas that would experience reduced travel times to Anchorage – the Southwest Mat-Su Borough, West Mat-Su Borough, Houston, and outside the “modeled Mat-Su area”).¹⁰ Additionally, the

comment 9r

bridge would neither alleviate traffic nor spur economic development in the region; according to the EIS, average travel time (“VHT”) and distance (“VMT”) would increase if KABATA builds the bridge, FHWA, *EIS* at tbl. 4-4, and total regional employment would be the same with or without the bridge, *id.* at tbl. 4-24. In short, the Knik Arm bridge is a costly and ineffectual solution to a non-existent problem.

comment 10r

Faced with these facts, the FHWA resorts to “state and locally adopted economic, port, land use, transportation, and comprehensive plans” and AS 19.75 to support the claimed need for the bridge. *E.g., id.* at app. K (comment 295-21). In its comments on the draft EIS, the Municipality of Anchorage aptly questions this strategy:

The [Municipality] believes the citations [to state and local plans that purportedly support a Knik Arm bridge] are selective and do not always convey the full context of the referenced works. . . . [S]everal different plans for the Port of Anchorage are cited, but not in their chronological sequence nor in recognition of evolving knowledge and conditions over time. . . . Several other references on page 1-11 cite actions indicating support for a Knik Arm crossing study. It could be noted that these were largely responsive to KABATA prompting. [The Municipality] believes the Draft EIS language is biased toward favorable findings, and not altogether objective. We believe that is inappropriate, especially so for large-scale public investment decisions of this magnitude.

Municipality of Anchorage, *Comments on the Knik Arm Crossing Draft EIS* 19-20 (Nov. 17, 2006). We agree that the cited plans and AS 19.75 are not a credible basis for the Knik Arm bridge. We thus urge the FHWA to select the No Action Alternative.

comment 11s

II. The FHWA Has Not Adequately Assessed or Disclosed All Reasonably Foreseeable Direct, Indirect, and Cumulative Impacts.

⁹ We also note that the FHWA erroneously depicts the recommended alternative as connecting to Ingra-Gambell, FHWA, *EIS* at fig. 2.39, despite the fact that neither KABATA nor the FHWA commit to providing this connection.
¹⁰ This population estimate is based on a population estimate for the Mat-Su Borough of 187,500. FHWA, *EIS* at tbl. 4-1. The EIS does not discuss, reference, or otherwise address the lower estimate of 137,682 provided by the Alaska Department of Labor and Workforce Development in October 2007 – two months before the FHWA issued the EIS. Eddie Hunsinger, Alaska Dep’t of Labor, *Population Projections, 2007 to 2030* 10 (Oct. 2007). This is arbitrary and violates NEPA. *E.g.*, 40 C.F.R. § 1502.24.

comment 11s continued Like the draft EIS, the EIS fails to fully and fairly disclose the significant environmental impacts of the proposed bridge. The FHWA ignores many of the comments submitted by ACE *et al.* regarding the inadequate disclosure of impacts in the draft EIS. Even the resulting disclosure in the EIS, however, shows that a bridge would significantly degrade water quality and marine and terrestrial fish and wildlife habitat, leading to long-term and widespread negative impacts to fish populations, wildlife populations, and the environment generally. *E.g.*, *id.* at 4-185, 4-198 to 4-199, 4-201, 4-215, 4-227, 4-230, 4-243, 4-244, 4-248, 4-255, 4-259 to 4-260, 4-301, 4-309, 4-310, 4-312, 4-315 to 4-316, 4-320, and 4-322. Among the remaining questions, however, is how the bridge would reduce air pollution, as the FHWA claims on page 4-129 of the EIS, when table 4-4 of the EIS indicates the bridge would increase average travel time and distance. Moreover, the FHWA indicates that impacts to terrestrial mammal populations are “not known” *id.* at 4-261, while in another section it indicates the impacts could be “substantial,” *id.* at 4-322, and in yet a third section it indicates the bridge “would not contribute to long-term adverse cumulative effects on the regional diversity of terrestrial habitats or wildlife populations,” *id.* at 4-312. The EIS contains incomplete, unsupported, and contradictory discussions of environmental impacts that leave decision makers and the public uninformed and confused about the impacts of the bridge and demonstrate that the EIS does not adequately disclose the reasonably foreseeable environmental impacts of this project, in violation of NEPA. *E.g.*, 40 C.F.R. § 1502.1.

comment 12s We further question the value and basis of the statement in the EIS that the bridge “would incur no damage and be immediately operational following the 100-year return period earthquake, and sustain significant but repairable damage following a major 1,000-year earthquake.” FHWA, *EIS* at 4-139. The FHWA appears to draw this conclusion based in part on “an assumed peak ground acceleration of 0.36g.” *Id.* Whatever the basis for this assumption, it falls below the levels (up to 0.8g) recorded in Kobe, Japan during the magnitude 6.8 earthquake that struck in 1995. It also falls below the 0.725g level the EIS states could be encountered in a 1,000-year earthquake. *Id.* Additionally, it presumably falls below the design levels for a 2,475-year earthquake that the *Seismic Studies Technical Report*, referenced in the EIS, urges KABATA to prepare the bridge to withstand: “Design measures should be taken to ensure ductile behavior in connections and major structural elements to prevent collapse under Maximum Considered Earthquake loads and efforts should be made to dissipate energy effectively whenever possible.” KABATA, *Seismic Studies Technical Report* 15 (Feb. 2006). Since the bridge would be placed in a zone of high seismicity “capable of producing giant earthquakes of Magnitude 9⁺” of several minutes duration (which is longer than those contemplated by the American Association of State Highway and Transportation Officials on which the FHWA partly bases its ground acceleration assumption), *id.* at 9-11, the discussion of seismic impacts to the bridge does not provide the full and fair discussion of environmental impacts that NEPA requires. *E.g.*, 40 C.F.R. § 1502.1.

comment 11s continued We support the comments on the draft EIS by various federal agencies that ask the FHWA to add to the EIS the discussions of impacts found in various reports, appendices, and other documents referenced in the EIS. These agencies include the U.S. Army Corps of Engineers (“Corps”), the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the U.S. Marine Mammal Commission, and the National Oceanic and Atmospheric Administration (“NOAA”). *Id.* at app. K. They conclude that the EIS does not adequately discuss, among other things, the impacts of the bridge on wildlife habitat and populations, and the means by which direct,

comment 11s indirect, and cumulative impacts on these and other resources would occur. *Id.* The FHWA
continued largely ignores their critiques, *id.*, and the EIS consequently leaves decision makers and the public without a reasonably thorough discussion of the impacts of the bridge, in violation of NEPA. *E.g.*, *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508, 526-27 (9th Cir. 2007); *Pac. Coast Fed'n of Fishermen's Ass'ns. v. Nat'l Marine Fisheries Serv.*, 482 F.Supp.2d 1248, 1255 (W.D. Wash. 2007).

comment 13r We support the comments on the EIS submitted separately by the Government Hill Community Council concerning the lack of compliance on the part of the FHWA with the requirements of section 106 of the National Historic Preservation Act, 16 U.S.C. § 470s, and section 4(f) of the Department of Transportation Act of 1966, as amended, 23 U.S.C. § 138. Among the issues these comments identify, the Council has not been allowed to fulfill its role as consulting party in section 106 and section 4(f) negotiations and consultations. Furthermore, the Council identifies critical failures of the EIS, including the failure of the Erickson Variant to satisfy the purpose and need criteria in the EIS, and the failure of KABATA and FHWA to adequately evaluate a reasonable range of alternatives.

comment 14r We support the comments on the EIS by Defenders of Wildlife *et al.*, the Marine Mammal Commission, and others that identify various shortcomings in the discussion of impacts to Cook Inlet beluga whales. Among the problems identified in these comments, the discussion of impacts to the beluga whale understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale population to extinction. *E.g.*, NOAA, *Comments on the Knik Arm Crossing Draft EIS 2* (Nov. 17, 2006). The EIS, as a result, violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the bridge. *E.g.*, *Ctr. for Biological Diversity*, 508 F.3d at 526-27.

comment 15r Lastly, we understand that the Corps is developing a hydrologic model of Knik Arm to address, among other things, the impacts of the bridge on siltation near the Port of Anchorage. This modeling should provide important information on the bridge and its effects on the Knik Arm ecosystem and related structures. Though we understand the FHWA believes its modeling provides an accurate assessment of the impacts of the proposed bridge, *e.g.*, FHWA, *EIS* at app. K (comment 199-7), we urge the FHWA to withhold a Record of Decision on the proposed Knik Arm bridge until the Corps issues the results of this modeling.

comment 16r **III. The Range of Alternatives in the EIS is Too Narrow for the Corps to Use as a Basis for Permitting the Bridge Under Section 404 of the Clean Water Act.**

The U.S. Army Corps of Engineers has repeatedly stated to the FHWA that the range of alternatives considered by the FHWA is too narrow for the Corps to use as a basis to decide whether to permit the bridge under section 404 of the Clean Water Act. “Under the [Clean Water Act section 404] Guidelines a permit can only be issued for the least environmentally damaging practicable alternative, so long as that alternative does not have other significant adverse environmental consequences. At this point, the [preliminary draft EIS] contains insufficient information for us to determine Guidelines compliance and is inadequate with respect to our permit action.” Corps, *Comments on the Preliminary Draft EIS 1* (Apr. 28, 2006). *See also* 40 C.F.R. § 230.10(a). The FHWA has not worked with the Corps – a cooperating

comment 16r
continued

agency on the EIS – to resolve this problem. As a result, the Corps cannot rely on the EIS to permit the bridge under section 404 of the Clean Water Act. *See Sylvester v. U.S. Army Corps of Engineers*, 882 F.2d 407, 409 (9th Cir. 1989) (“Obviously, an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable. This court in *Hintz* quite properly suggested that the applicant's purpose must be ‘legitimate.’”).

comment 17s

IV. The FHWA Violated the FAHA by Approving the Addition of the Knik Arm Bridge to the Anchorage Area Transportation Improvement Program.

The FHWA unlawfully approved the addition of the Knik Arm bridge to the transportation plans of the Anchorage Metropolitan Area Transportation Solutions Policy Committee (“AMATS”). The Federal Aid Highway Act requires metropolitan planning organizations (“MPO”) like AMATS to prepare long- and short-range transportation plans. 23 U.S.C. § 134(c)(1). When an MPO proposes to include a “major metropolitan transportation investment” in its plans, it must either prepare a “major investment study” (“MIS”) or an EIS to consider the effects of and alternatives to the proposed project. 23 C.F.R. § 450.318(a), (i) (2006). Furthermore, when an MPO adopts or revises its transportation plans, the FHWA must certify that the MPO did so in compliance with the FAHA implementing regulations, including the MIS/EIS requirement. *Id.* at § 450.330(a). AMATS has never undertaken an MIS, nor did it have a final EIS when it added the Knik Arm bridge to its transportation plans on June 27, 2007. Nonetheless, the FHWA certified that AMATS revised these plans in compliance with the FAHA regulations. Letter from David C. Miller et al., FHWA, to Gordon Keith, AMATS, *AMATS TIP Air Quality Conformity Determination 1* (June 29, 2007). This approval violates the FAHA and renders the addition of the Knik Arm bridge to the AMATS plans ineffective. 23 C.F.R. § 450.330(a). As a result, the bridge is not lawfully included in the Alaska statewide transportation plans and is thus ineligible for federal funding and should not be considered by the FHWA in the EIS. *E.g.*, 23 U.S.C. § 134(j)(5).

V. Conclusion

As set out above, the EIS violates NEPA. Furthermore, this costly and environmentally harmful project would reduce travel time for only 20% of the residents of the Upper Cook Inlet region, would increase average travel time and distance in the region, and would not spur economic growth. Lastly, the project is ineligible for funding under the FAHA. For all of the foregoing reasons, we urge the FHWA to select the No Action Alternative.

Thank you for considering these comments. Please contact me if you need more information.

Yours truly,

/s/

Justin Massey
Staff Attorney



Strategic Planning
 Telephone: (907) 265-2468
 Facsimile: (907) 265-2312
 e-mail: carrb@akrr.com

February 22, 2008

Mr. David C. Miller, Division Administrator
 Federal Highway Administration
 Alaska Division
 709 West 9th Street, Room 851
 P.O. Box 21648
 Juneau, Alaska 99802

Subject: Comments on the Knik Arm Crossing Final Environmental Impact Statement and Final Section 4(f) Evaluation

Dear Mr. Miller:

The Alaska Railroad Corporation (ARRC) has reviewed the **Knik Arm Crossing Final Environmental Impact Statement and Final Section 4(f) Evaluation** (FEIS). We appreciate the opportunity to provide written comments again on this important infrastructure project for Southcentral Alaska as well as the State of Alaska.

Beginning
 to
 Comments
 1-3

While we are pleased to see that the FEIS adopted some of the changes we recommended in response to the DEIS, we still find other responses unsatisfactory. Our major concerns are discussed below along with our recommendations.

ARRC Comment 271-11

With regard to a spur line to Port MacKenzie, although ARRC and the Mat-Su Borough indicated it is not likely to be operating by 2030, construction of a gas pipeline may accelerate that project dramatically.

KABATA Response

Should construction of a gas pipeline change the rail spur conditions prior the KAC construction, additional consideration would be required"

ARRC Response to FEIS

Comment
 1
 Cont.

The Mat-Su Borough and the ARRC have accelerated the Port MacKenzie Rail Spur project and in fact, the Surface Transportation Board (STB) is in the middle of the NEPA process with public hearings scheduled in March 2008. **In accordance with KABATA's comment above, the FEIS must reconsider the impact the two projects have on each other.**

EPA Comment 313-16

While a rail bridge is more expensive to construct, future plans are to include this service, which would result in having to build an additional bridge for rail use. Emergency evacuation and commuter transport, as well as longer-range freight and passenger transport could be provided by rail. Rail may also be more compatible with the Mat-Su Borough's comprehensive plan, which includes future rail from Port MacKenzie to the Parks Highway. We recommend further study, coordination, and collaboration with the Alaska Railroad Corporation (ARRC) and other entities, which could potentially result in better transportation solutions.

KABATA Response

Rail serves a different market and meets different needs than a vehicle bridge. Rail is most efficient serving longer trips carrying heavier loads than are intended to use the KAC. Rail is not, however, efficient at hauling smaller loads shorter distances, like between the two ports or between warehouses at Port MacKenzie with locations in Anchorage etc. ... the kinds of trips that would be served by a vehicle

bridge. A rail connection across Knik Arm in the KAC corridor is a worthy project but would not meet projected population growth and economic development needs forecast with a vehicle bridge. While a rail only bridge would cut miles off of the ARRC's trips north it would do little for trips to and from Port MacKenzie from Anchorage and would provide little to no benefit for future housing growth south and west of Wasilla because it is not anticipated to generate ridership. There are various reasons, well-documented in professional literature, about why mass-transit modes like commuter rail do not serve low density small population bases very well. Even in the Wasilla-Palmer to Anchorage corridor, which has an established population base, ARRC cannot make commuter rail feasible and estimates high subsidies would be required. For these reasons and the high cost, a rail crossing was not deemed reasonable. The future rail corridor from Port MacKenzie to the Parks Highway identified by the commenter as being in the Borough's comprehensive Plan, includes a highway corridor in the same reserve. In other words, rail is no more consistent than roadway connections. Moreover, roadway connections are already built to Port MacKenzie and roadway improvements to those routes are also in the Boroughs' and State's plans and programs and are therefore considered consistent.

Finally, extensive coordination with the ARRC and Mat-Su Borough was done regarding road and rail connections down to Port MacKenzie and the KAC through the Economic Working Group. At that time, rail and highway connections in the reserve corridor and a rail crossing of Knik Arm were discussed. Despite having reserved a corridor, neither ARRC nor Mat-Su officials felt a rail corridor/crossing was reasonably foreseeable before 2030. Similarly, the separate highway connection from Willow to Point MacKenzie was not deemed reasonably foreseeable by DOT&PF or Mat-Su Borough officials.

ARRC Response to FEIS

Comment 2
Cont. The situation surrounding the Port MacKenzie Rail Spur has clearly changed over the past year. The Mat-Su Borough received a \$10 million dollar appropriation during the 2007 legislative session to perform conceptual engineering and environmental documentation for the Port MacKenzie rail extension, and ARRC has been working with the Mat-Su Borough to develop this documentation. The Surface Transportation Board has begun the NEPA process for this project, with scoping meetings planned for March 2008. **Therefore, it is necessary for the Knik Arm Crossing FEIS to consider this project in evaluating cumulative impacts.**

Comment 3
Cont. Further, KABATA states "Even in the Wasilla-Palmer to Anchorage corridor, which has an established population base, ARRC cannot make commuter rail feasible and estimates high subsidies would be required." Commuter rail in this corridor is feasible and ARRC continues to move forward along with the Mat-Su Borough, the City of Wasilla, and community interests to make this a reality. The comment about subsidies is inappropriate since KABATA is well-aware that all public transit requires subsidies, including highways. That is why KABATA has an MOU with the Alaska Department of Transportation making the KAC part of the National Highway System, which makes it eligible for federal highway subsidies. **We recommend any comment relating to commuter rail in the Wasilla/Palmer to Anchorage corridor be deleted since it is irrelevant to the KAC.**

Thank you again for the opportunity to comment on the FEIS. Please contact me at 265-2468 if you have questions or require additional information.

Sincerely,



Bruce Carr
Director, Strategic Planning

CC: Barbara Hotchkin, ARRC

APPENDIX A – PART 2-1
FHWA RESPONSES TO SUBSTANTIVE COMMENTS RECEIVED
ON THE *FINAL EIS*

Comment Document ID	Comment #	Commenter	Affiliation	Comment Text	Response
317	1	Hulbert	Public	Coming through the Big Lake area, on the south side of the lake is going to destroy the life styles of everyone living in the area. It will bring unwanted traffic, unsavory businesses and individuals, and increase the unwanted noise level. This is a very residential area where families live and cherish the quiet and natural beauty of the area. The route should follow the proposed train track route north of the Little Susitna River and the already existent Knik-Goose Bay road.	The Matanuska-Susitna Borough (Mat-Su Borough) Approach portion of the Knik Arm Crossing (KAC) project terminates at the intersection of Burma Road and Point MacKenzie Road. In addition, the project provides a direct connection to the existing Knik-Goose Bay Road, as the comment suggests. The EIS acknowledges there will be additional growth and impacts. Future plans by the Mat-Su Borough and Alaska Department of Transportation and Public Facilities (ADOT&PF) include upgrades to Burma Road/South Big Lake Road and Mat-Su Borough is planning a potential future connection to the Willow Connector, north of the Little Susitna River.
317	2	Hulbert	Public	I did not find in the material a reasonable plan to eliminate the toll in the future.	The comment is correct—no plan is in place to eliminate tolls. It is uncertain at this phase of project development if or when tolls would be eliminated.
317	3	Hulbert	Public	I did not find in the material any emergency plan for vehicles that break down, car accidents, or natural disasters.	Ten-foot wide shoulders will be built as part of Phase 1 to allow for disabled vehicles and emergency conditions to be outside of traffic lanes. Specific emergency response procedures for the bridge and approaches during operations and disasters will be determined in future project phases.
317	4	Hulbert	Public	There is no mention of foot traffic in case of emergency car breakdown or accident. For that matter just ordinary walkers, bicyclers, horse riders, dog sledders, or any of the ordinary highway traffic access that happens in Alaska. How have those concerns been met?	Ten-foot shoulders will be built as part of Phase 1 to allow for disabled vehicles and emergency conditions to be outside of traffic lanes. The project also includes provisions for a multiuse pathway as described in Sections 2.6 and 4.2.2.6 of the <i>Final Environmental Impact Statement (Final EIS)</i> ; it is part of the proposed general design features. This pathway will meet the need for someone to leave the bridge by foot in case of a car breakdown or accident, while the disabled vehicle would be able to stop on the shoulder. Walkers and bicyclists would have access to the multiuse pathway. Because of safety concerns the project would not be designed to accommodate horse riders and dog sledders.
317	5	Hulbert	Public	Regardless of the "study" results, putting all those thousands of tons of rock, pylons, and shielding into the Knik Arm are going to have an impact on all things that currently reside in those areas. It will change the natural flow of the water and the shift of the sands and silt. It will alter natural patterns of the salmon and the whales, as well as the life patterns of any of the other inhabitants. The current between the ends of the fill areas will be swifter and more dangerous, as will the build up of ice chunks. It is my personal belief that the flow of the Knik Arm should not in any way be impeded, that we should look for some alternative solution that takes us under or over without any direct interference.	<p>The comment expresses concern that the Crossing will “alter natural patterns of the salmon and the whales, as well as the life patterns of any of the other inhabitants. The current between the ends of the fill areas will be swifter and more dangerous ...”</p> <p>Infilling for the bridge approaches will result in the permanent loss of approximately 90 acres of intertidal and subtidal habitat. The presence of the approaches will increase sedimentation in the area during project operation, resulting in sediment deposition that will affect approximately 260 acres of intertidal habitat. The 90 acres of directly affected habitat and 260 acres of habitat affected by sedimentation total less than 0.13 percent of all available intertidal and subtidal habitats in Knik Arm. Federal Highway Administration (FHWA) and KABATA do not expect this habitat alteration to adversely affect fish species in Knik Arm. Loss of shoreline habitat and function might have a minor effect on rearing and migrating juvenile salmon species during their adaptation to saltwater environments. Under present conditions, the absence of natural intertidal structures limits nearshore physical refugia (refuge from predators) and the existing distribution of food sources within both midchannel and shoreline waters likely reduces dependence on littoral habitat (the zone between high tide and low tide) for feeding. Therefore, this small portion of nearshore Knik Arm estuarine habitat is not critical to the rearing of juvenile salmon species. Consequently, there will be no substantial effects on beluga whale prey fish. This loss of habitat from fill placement is not anticipated to affect the foraging efficiency of beluga whales.</p> <p>The comment concerns the “change in the natural flow of the water and the shift of the sands and silt.” Hydrologic and sedimentation results presented in the <i>Final Environmental Impact Statement (Final EIS)</i> and technical reports found that no significant impacts to hydrologic dynamics would occur as a result of the Recommended Crossing alternative. The <i>Final EIS</i> also discusses results of micro-scale modeling completed to determine potential effects on fish passage around bridge abutments in Section 4.8.1.3 (p. 4-194) and Section 4.8.2.2 (p. 4-232).</p> <p>Because of the surface roughness created by the large, abutment armor rock (3–5 feet in diameter), a wedge-shaped volume of flow (boundary-layer wedge) would exist in waters directly adjacent to the proposed bridge approaches. Even at maximum tidal flows (i.e., spring ebb and flood) the boundary-layer wedge would extend 43 feet from the abutment to a depth of 22 feet, within which the flow speed would be less than 0.5 foot per second (<i>Hydrology and Hydraulic Environment of Knik Arm Draft Report</i>, KABATA, 2006).</p> <p>A typical fry will be able to avoid entrapment and maintain opportunities for rest and refuge through use of the numerous crevices along the armor rock face. Because fish passage is not expected to be affected, these effects will not substantially alter long-term prey availability or accessibility for beluga whales.</p> <p>The change in hydrodynamics is not likely to change prey accessibility for beluga whales in Knik Arm. Long-term habitat shifts and bathymetric alterations may result from substantial areas of silt deposition along the bridge approaches. Stable areas of settled sediment are likely to benefit beluga prey species. As these areas accrete over time, they might smooth the nearshore bathymetry of the migration corridor used by anadromous fishes near the bridge approaches, thus countering or reducing the effects of forcing these fishes into deeper water. These depositional areas might also benefit the local food web by increasing primary productivity through enhanced production of organic matter and invertebrates.</p> <p>The comment says that “the build up of ice chunks” will be dangerous. KABATA studied ice conditions in Knik Arm and reported them along with recommendations for structural specifications for the proposed bridge and approach abutments in the <i>Knik Arm Crossing Ice Condition Findings Technical Memorandum</i> (KABATA, 2005). The comment is correct in noting that ice at the Knik Arm Crossing site is anticipated to have a significant impact on causeway armor and</p>

					<p>bridge substructure design. The memorandum notes that the abutment and causeway slope faces will require large armor to prevent floatation and movement of the armor. Ice loading for the bridge substructure was approximated assuming pier geometry similar to other successful ice resisting structures in the Cook Inlet. The testing and survey program done during the summer 2004 and 2005 was conducted to help verify design assumptions, such as bridge length, currents, and scour. Field ice load testing at Port MacKenzie and material testing at the Port of Anchorage will also help determine final design ice loads for the Crossing structures.</p> <p>The comment questions why this project cannot be built to avoid contact with water in Knik Arm by going over or under it. Presumably, the comment is suggesting a suspension or cable-stayed bridge to go over the arm. Two of the technical screening criteria would not be met by a suspension or cable-stayed bridge: those of compliance with airspace restrictions and with military operations. The height of the support structures and cables would violate vertical airspace restrictions associated with Elmendorf (runways and the Circular Disposed Antenna Array [CDAA]) and Ted Stevens Anchorage International Airport and would conflict with military mission or operations by violating airspace restrictions. In the Environmental Impact Statement, these constraints were identified at as fatal flaws for a suspension bridge. The technology to free-span more than approximately 5,000 feet without a pier does not yet exist; thus it is not possible to cross over Knik Arm without in-water construction.</p> <p>The comment's other suggestion is to go under the water. Presumably, the comment is suggesting a tunnel under the floor of Knik Arm. Early in the development of crossing options, a tunnel was investigated and probable costs were estimated. The options included tunneling, or installing precast tunnel segments through the silts. Both options were found to be unreasonably costly (approximately \$1.6 billion), which made them unreasonable for meeting the purpose and need for the project. To reduce in-water impacts, bridge design/construction features will be adapted to address National Marine Fisheries Service's concerns in the Final Design.</p>
318	1	Norgaard	Public	I would not want to see any bridge/crossing unless it included producing energy from tidal wave action. It would be a big loss if this opportunity were overlooked.	Consistent with the National Environmental Policy Act (NEPA), a full range of alternatives to address the purpose of and need for the KAC Project were identified and evaluated. These alternatives were screened using nine purpose and need criteria and eight technical criteria to determine reasonable alternatives for detailed evaluation in the Environmental Impact Statement. See Section 2.5.3.3 of the <i>Final Environmental Impact Statement (Final EIS)</i> for discussion of a tidal power dam alternative. Based on the results of the initial screening process, the tidal power dam Crossing was not considered a reasonable alternative for this project and was eliminated from further consideration.
319	1	Bittner	DNR OHA	<p>Over the last two years, we have asked for a comprehensive look at the undertaking, a revaluation of the Area of Potential Effects and an evaluation of the intensity of the resultant impacts. These concerns are unresolved and unaddressed.</p> <p>FHWA did not take into consideration the impacts to cultural resources to determine the preferred alternative. To nearly every submitted comment concerning cultural resources, FHWA responded by saying, "Under the Section 106 process (36 CFR 800), FHWA found that the Erickson Alternative will have an adverse effect on the Government Hill Urban Renewal District, and the Alaska State Historic Preservation Office (SHPO) concurred with this finding (Letter dated 7-13-2006). Under the 106 process, a Memorandum of Agreement (MOS) is being developed to address mitigation for adverse effects." Deferring to the Section 106 process demonstrates that impacts to historic properties were not given adequate consideration during the alternative decision-making process.</p>	<p>The comment states that "FHWA did not take into consideration the impacts to cultural resources to determine the preferred alternative."</p> <p>Impacts to historic properties were given serious consideration at every stage of the National Environmental Policy Act (NEPA) process. Federal Highway Administration (FHWA) carefully considered impacts to historic sites in determining the Recommended Alternative. Much of the documentation is within the <i>Final Section 4(f) Evaluation</i>. In the Anchorage area, there is no prudent and feasible alternative that would entirely avoid Section 4(f) properties, including the Government Hill Urban Renewal Historic District, individually-eligible historic buildings, and municipal parks. The <i>Final Section 4(f) Evaluation</i> in Section 4.7 of the <i>Final Environmental Impact Statement (Final EIS)</i> properly examined alternatives that might avoid Section 4(f) properties and found none to be a "feasible and prudent avoidance alternative" as defined in the new regulations (23 C.F.R. 774.17).</p> <p>Because both the Degan and Erickson alternatives would use Section 4(f) properties, a least-overall-harm analysis was necessary [called "least <i>net</i> harm" in previous guidance and the <i>Final Section 4(f) Evaluation</i>]. Further detail on least-overall-harm analysis, which specifically weighs historic site impacts, appears in Section 5.3 of the <i>Final Section 4(f) Evaluation</i> and in the ROD.</p> <p>Since the publication of the <i>Final EIS</i>, FHWA and KABATA have committed to substantial additional mitigation measures, which address the concerns of the comment. These additional commitments are specified in the Section 106 Programmatic Agreement (PA), which the State Historic Preservation Office (SHPO) and the Municipality of Anchorage (MOA) have since agreed to by signing the PA (see Appendix B of the Record of Decision [ROD]).</p> <ul style="list-style-type: none">• Stipulations III.E, F, G, H, and I of the PA overlap with existing <i>Final EIS</i> commitments related to the impacts to the streetscape and other Government Hill resources.• Stipulation III.E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with the SHPO, the Advisory Council on Historic Preservation (ACHP), the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns Construction of a Cut-and-Cover Tunnel on Government Hill and the mitigations necessary to minimize community impacts.• The PA developed through the Section 106 process stipulates that the MOA will receive assistance for historic preservation planning under Stipulation IV a, 3.a which states: "FHWA will provide funding to the MOA to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed below in IV.A.3.b), Downtown, South Addition, and Fairview (Appendix F, <i>Community Council District Boundaries</i>), and provide for the South Addition historic property baseline inventory. Not later than six (6) months after the date

					<p>of this PA, FHWA shall negotiate and enter into a MOU with the MOA to fund these Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management "tools" that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C. <i>Final EIS Traffic Impacts</i>. In addition to new funding, the MOA will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The MOA shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the ROD."</p> <ul style="list-style-type: none">• Stipulation IX.C says that "FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>."• Stipulation III.H commits FHWA to "consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts."• Stipulation III.K says "FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School." <p>To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p>
319	2	Bittner	DNR OHA	<p>There are still unknown impacts to historic properties that were not considered during the decision making process. A common response to our comments was,</p> <p>"The specific extent of adverse impacts to the Government Hill Urban Historic District will not be known in detail until specific design elements are developed."</p> <p>Please explain how this unknown was taken into consideration during the decision making process. Could the potential design increase direct, indirect and cumulative impacts to this significant historic district? Are there design alternatives that still must be considered?</p>	<p>The comment expresses concern that the project design could increase direct, indirect, and cumulative impacts to the Government Hill Urban Renewal Historic District.</p> <p>The Government Hill Urban Renewal Historic District will not be directly affected until Phase 2 of the project (estimated 2018 to 2023). The <i>Final Environmental Impact Statement (Final EIS)</i> includes all anticipated impacts from the Recommended Alternative and potential design alternatives or updates that may occur. Since the publication of the <i>Final EIS</i>, the Federal Highway Administration (FHWA) and KABATA have committed to substantial additional mitigation measures, which address the concerns alluded to by the comment. Although the alternative selection process has concluded, design features and context sensitive solutions will be considered further with the State Historic Preservation Office (SHPO), the Municipality of Anchorage (MOA), Government Hill Community Council (GHCC), FHWA and KABATA during the design phase.</p> <p>The comment expresses concern that unknown impacts are not addressed. The purpose and need for the action; reasonable alternatives; and the direct, indirect, and cumulative impacts on the environment (including the social, economic, cultural and recreational, historic, physical, and natural environments) were weighed, considered, and balanced in deliberations of providing safe and efficient transportation and the benefits of the proposed action. During the decision-making process a Programmatic Agreement (PA) was developed in consultation with Advisory Council on Historic Preservation (ACHP), SHPO, Elmendorf Air Force Base (Elmendorf), GHCC, FHWA, MOA, Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project.</p> <p>Among many commitments outlined in the PA and Record of Decision (ROD), the following commitments are specified in the Section 106 PA, which the SHPO and the MOA have agreed to by signing the PA (see Appendix B of the ROD).</p> <ul style="list-style-type: none">• Stipulation III.B of the PA requires that contracts developed in the implementation of all phases of this project shall expressly refer to and require compliance with the stipulations of this PA. Stipulation III includes a Neighborhood Plan for Government Hill that will address preservation of buildings and landscape features that define the historic character of the Government Hill neighborhood, while guiding other aspects of the growth and development in the neighborhood.• Stipulation III also includes implementation of Context Sensitive Mitigation (CSM) to minimize and mitigate adverse effects of the KAC Project to Government Hill and maintain the Government Hill neighborhood's building and landscape character, as nearly as practicable.• Stipulations III.E, F, G, H, and I of the PA overlap with existing <i>Final EIS</i> commitments related to the impacts to the streetscape and other Government Hill resources.• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns Construction of a Cut-and-Cover Tunnel on Government Hill and the mitigations necessary to minimize community impacts.• Stipulation IX.C says that "FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>."• Stipulation III.H commits FHWA to "consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts."

					<ul style="list-style-type: none">Stipulation III.K says "FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School." <p>To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p> <p>In consideration of future, unforeseen adverse effects, the PA addresses mitigation for unforeseen impacts under Stipulation V.B <i>Mitigation Measures for Future, Unforeseen Adverse Effects</i>. Stipulation V includes a notification process that may be used if impacts occur differently than outlined in the <i>Final EIS</i>.</p> <p>The PA also includes stipulations for periodic reviews and re-evaluation of impacts prior to Phase 2 (Stipulation IX, Review Protocols).</p>
319	3	Bittner	DNR OHA	FHWA did not address the intensity of the impacts to the resource. The Government Hill Urban Renewal Historic District will lose 15% of its eligible duplexes, 33% of its pre-Urban Renewal resources, and an entire designed streetscape. These are only the direct impacts. The severity of these direct impacts to the first urban renewal project finished in the western United States was not considered. Demolition of an entire streetscape in the historic district greatly impacts the qualities that make the district eligible for inclusion in the National Register of Historic Places.	<p>The comment says that "FHWA did not address the intensity of the impacts to the resource", and that "the severity of these direct impacts to the first urban renewal project finished in the western United States was not considered."</p> <p>Impacts to historic properties were given serious consideration at every stage of the National Environmental Policy Act (NEPA) process. Federal Highway Administration (FHWA) carefully considered impacts to historic sites in determining the Recommended Alternative. The documentation is within the <i>Final Section 4(f) Evaluation</i>. In the Anchorage area, there is no prudent and feasible alternative that would entirely avoid Section 4(f) properties, including the Government Hill Urban Renewal Historic District, individually-eligible historic buildings, and municipal parks. The <i>Final Section 4(f) Evaluation</i> in Section 4.7 of the <i>Final Environmental Impact Statement (Final EIS)</i> properly examined alternatives that might avoid Section 4(f) properties and found none to be a "feasible and prudent avoidance alternative," as defined in the new regulations (23 C.F.R. 774.17).</p> <p>Because both the Degan and Erickson alternatives would use Section 4(f) properties, a least-overall-harm analysis was necessary [called "least <i>net</i> harm" in previous guidance and the <i>Final Section 4(f) Evaluation</i>]. Further detail on least-overall-harm analysis, which specifically weighs historic site impacts, appears in Section 5.3 of the <i>Final Section 4(f) Evaluation</i> and in the ROD.</p> <p>A Programmatic Agreement (PA) was developed to reduce the intensity of impacts. The PA includes a mitigation section under Stipulation III, <i>Mitigation Measures</i>, which focuses on the resources affected in Government Hill including the Government Hill Urban Renewal Historic District. The cut-and-cover tunnel, architectural documentation, preservation planning, and Context Sensitive Mitigation are all part of the mitigation measures in Government Hill being implemented to avoid, minimize, and mitigate the direct and indirect impacts to the streetscape and the Government Hill Urban Renewal Historic District.</p>
319	4	Bittner	DNR OHA	FHWA did not adequately address indirect and cumulative impacts. In response to our comment regarding noise, FHWA said the issue was considered in the Noise Impacts Section. Our concern is how noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places. This concern was not considered in the Noise Impacts Section. The district was built after Elmendorf Air Field so the air noise existed; however, vehicular noise is different and must be considered.	<p>The concern expressed in the comment "is how noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places."</p> <p>Noise level, or absence of noise, is not a defining characteristic that makes the district eligible for the National Register. Nevertheless, during the <i>Draft Environmental Impact Statement (Draft EIS)</i> process, Federal Highway Administration (FHWA) conducted a traffic noise impact analysis (see <i>Knik Arm Crossing Traffic Noise Technical Analysis</i>, KABATA, 2006). No specific study was done to determine the potential effect of vehicular noise to the eligibility of historic properties, because based on the results of the general study, noise abatement is not required.</p> <p>The <i>Draft Section 4(f) Evaluation</i> in the <i>Draft EIS</i> and <i>Final Environmental Impact Statement (Final EIS)</i> includes an evaluation of impacts to cultural resources such as air quality, noise, visual quality, and vibration. See Sections 3 and 5 of the <i>Final Section 4(f) Evaluation</i> for a detailed analysis of historic properties related to noise and the impact-minimization measures of the alternatives. Section 5, regarding Minimization Measures, states:</p> <p>The design intent in negotiating the crossing of Government Hill by using a cut-and cover tunnel for the main through highway was to minimize permanent impact to the neighborhood. The effort to minimize impacts to the neighborhood included homes, historic properties and districts, and parks. This design would cross Government Hill at its narrowest point, depress the highway in a trench, and cover the trench with a "lid." The lid would function as usable ground surface after the project was complete. This design, while more expensive to construct than a surface highway, would avoid bisecting the area with a major surface highway and would place the noise, industrial atmosphere, exhaust, and dust associated with the main, high-speed freeway principally out of sight ...</p> <p>FHWA views the historic properties as part of the broader Government Hill community setting and commits to mitigation and project design solutions developed in a manner that promotes the significant historic characteristics and continued viability of the neighborhood that have been documented in the KAC Project, <i>Recommendations for a Historic District(s): Government Hill, Anchorage, Alaska, Volumes 1 and 2</i> (Stephen R. Braund & Associates, 2006) and <i>Final EIS</i> while meeting project goals.</p> <p>The Section 106 Programmatic Agreement (PA) reinforces a commitment in the <i>Final EIS</i> to use Context Sensitive Mitigation to reduce or mitigate impacts to Government Hill, which may include features that reduce noise levels. As presented in the PA, FHWA will ensure that the construction contractor develops a Construction Management Plan (Stipulation III.K) for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the</p>

					<p>Government Hill Elementary School. The Government Hill Community Council (GHCC), FHWA, and the State Historic Preservation Officer (SHPO) will provide comments on this plan as it relates to historic properties after a final draft is prepared for Phase 1 and Phase 2.</p> <p>The PA was executed by Advisory Council on Historic Preservation and SHPO in December 2008. A MOU with the Municipality of Anchorage to carry out the provisions of the PA was signed by the Mayor on January 14, 2010.</p>
319	5	Bittner	DNR OHA	Visual impacts will not be completely mitigated by the tunnel. The tunnel emerges before entering the Government Hill Urban Renewal Historic District. The road grade meets the existing topography while still in Government Hill. To accommodate industrial activity, the viaduct will be taller than the buildings in the historic district. How will the introduction of this new element near the boundaries of the historic district impact the visual characteristics that make this district eligible for the register?	<p>The comment says that “[v]isual impacts will not be completely mitigated by the tunnel.”</p> <p>Documentation for the project does not state that the cut-and-cover tunnel will completely mitigate visual impacts. At the south end of the tunnel under the Erickson Alternative, the highway remains in a cut with nearly vertical walls, preserving surface land space and containing the highway (moving traffic) below the visual sight line for people on the surface. The Phase 2 viaduct will be approximately 20 feet higher than the existing A-C viaduct to the west.</p> <p>Since the publication of the <i>Final Environmental Impact Statement (Final EIS)</i>, the Federal Highway Administration (FHWA) and KABATA have committed to substantial additional mitigation measures for the Government Hill Neighborhood, which address the concerns alluded to by the comment. These additional commitments are specified in the Section 106 Programmatic Agreement (PA), which the State Historic Preservation Office (SHPO) and the Municipality of Anchorage (MOA) have since agreed to by signing the PA (see Appendix B of the Record of Decision [ROD]).</p> <ul style="list-style-type: none">• Stipulations III.E, F, G, H, and I of the PA overlap with existing <i>Final EIS</i> commitments related to the impacts to the streetscape and other Government Hill resources.• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with the SHPO, the Advisory Council on Historic Preservation (ACHP), the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns Construction of a cut-and-cover tunnel on Government Hill and the mitigations necessary to minimize community impacts.• Stipulation IX.C says that “FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>.”• Stipulation III.H commits FHWA to “consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.” <p>To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p>
319	6	Bittner	DNR OHA	To accommodate industrial activity, the viaduct will be taller than the buildings in the historic district. How will the introduction of this new element near the boundaries of the historic district impact the visual characteristics that make this district eligible for the register?	Repeat of 319-5; See response 319-5.
319	7	Bittner	DNR OHA	The potential impact to archaeological resources from development on the Matanuska Susitna Borough side of the project is still not addressed. We acknowledge that FHWA has funded initiation of a Historic Preservation Plan for areas that will be impacted by the bridge. However, not enough data exists on where prehistoric and historic sites are located. More archaeological survey is needed west of Knik Arm to adequately evaluate the potential impacts from development.	<p>The comment says that “The potential impact to archaeological resources from development on the Matanuska-Susitna Borough side of the project is still not addressed.”</p> <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the Final Environmental Impact Statement upon which this comment is based. Consulting parties referred to in the PA include the signatories, invited signatory, and the concurring parties. The process included additional consultation with the signatories, which include Alaska State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), Elmendorf Air Force Base (Elmendorf), and Federal Highway Administration (FHWA); the invited signatory is KABATA; and concurring parties are Knikatnu, Inc., Eklutna, Inc., Knik Tribal Council, Native Village of Eklutna, Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Government Hill Community Council (GHCC), Anchorage Historic Properties, Inc. (AHP), Alaska Association for Historic Preservation (AAHP), and Anchorage Historic Preservation Commission (AHPC).</p> <p>The comment further notes that “not enough data exists on where prehistoric and historic sites are located. More archaeological survey is needed west of Knik Arm to adequately evaluate the potential impacts from development.” In consideration of potential impacts to archaeological resources on the Mat-Su side of the project, the PA includes additional mitigation under Stipulation III, <i>Mitigation Measures</i>, and Stipulation IV, <i>Additional Mitigation Measures for Indirect Effects</i> for additional data gathering including surveys, additional staff for Mat-Su Borough preservation planning, a KABATA Liaison, and staff for the Knik Tribal Council and Native Village of Eklutna to coordinate with the Mat-Su Borough efforts.</p> <p>Although FHWA has determined with SHPO concurrence that there would be no direct effects on historic properties within Mat-Su Borough from the Mat-Su Approach, FHWA acknowledges that there is potential for indirect effects in the Mat-Su Borough due to land development caused by construction of the KAC Project, which may affect historic properties. FHWA has provided additional funding, to the Mat-Su Borough to verify through field investigations the <i>Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough</i>, originally funded through the CLG Program Historic Preservation Plans in 2006. The field investigations assist Mat-Su Borough in</p>

					<p>their efforts to establish historic preservation planning and management “tools” that guide future land use, historic preservation, and development in areas under their jurisdiction.</p> <p>FHWA negotiated and entered into a MOU with the Mat-Su Borough in June 2009 for field verification of sensitivity areas identified in the Mat-Su Borough preservation plan based on a scope developed in consultation with SHPO. Mat-Su Borough coordinates the field test verification with the Tribes pursuant to Stipulation IV.A.2 <i>Tribal Traditional, Religious and Cultural Preservation</i>. In support of the Mat-Su Borough Historic Preservation Plan, FHWA also provided funding to the SHPO for Geographic Information System (GIS) data entry related to the electronic conversion of the Alaska Heritage Resources Survey (AHRs) inventory database in the Mat-Su Borough. FHWA also provided funding to Mat-Su Borough to incorporate AHRs data into Mat-Su Borough’s GIS system.</p>
319	8	Bittner	DNR OHA	Simply documenting the destroyed buildings, offering to sell the impacted buildings and supplying a very nominal amount of planning money does not appropriately compensate for the loss of an entire streetscape of an important historic district. Further, it does not mitigate the impacts to cultural resources on the Matanuska Susitna side of the project.	<p>The comment expresses concern about the adequacy of mitigation for impacts to the streetscape of the historic district.</p> <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the Final Environmental Impact Statement upon which this comment was based. The PA is intended to address the concerns expressed. Consulting parties referred to in the PA include the signatories, invited signatory, and the concurring parties. The process included additional consultation with the signatories, which include Alaska State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), Elmendorf Air Force Base (Elmendorf), and Federal Highway Administration (FHWA); the invited signatory, which is KABATA; and concurring parties, which are Knikatnu, Inc., Eklutna, Inc., Knik Tribal Council, Native Village of Eklutna, Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Government Hill Community Council (GHCC), Anchorage Historic Properties, Inc. (AHPI), Alaska Association for Historic Preservation (AAHP), and Anchorage Historic Preservation Commission (AHPC) to address mitigation of adverse effects to historic properties from the KAC Project including the Anchorage Approach and the Mat-Su Approach. The signatories agreed the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts.</p> <p>In the PA under Stipulation III, <i>Mitigation Measures</i>, specific mitigation measures are outlined for impacts to resources in the MOA and Mat-Su Borough, and those measures go beyond what is listed in this comment.</p> <ul style="list-style-type: none">• Stipulation III.E, F, G, H, and I of the PA overlap with existing <i>Final Environmental Impact Statement (Final EIS)</i> commitments related to the impacts to the streetscape and other Government Hill resources.• Stipulation III-E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. <p>In order to integrate mutual goals, FHWA continues to consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, to maximize the effectiveness and compatibility of historic properties mitigation measures.</p> <p>Stipulation III.I concerns <i>Construction of a Cut-and-Cover Tunnel on Government Hill</i> and the mitigations necessary to minimize community impacts.</p> <p>The comment expresses concern about the adequacy of mitigation for impacts to the Mat-Su side of the project.</p> <p>In consideration of potential impacts to archaeological resources on the Mat-Su side of the project, the PA includes additional mitigation under Stipulation III, <i>Mitigation Measures</i>, and Stipulation IV, <i>Additional Mitigation Measures for Indirect Effects</i> for additional data gathering including surveys, additional staff for Mat-Su Borough preservation planning, a KABATA Liaison, and staff for the Knik Tribal Council and Native Village of Eklutna to coordinate with the Mat-Su Borough efforts.</p> <p>Although FHWA has determined with SHPO concurrence that there would be no direct effects on historic properties within Mat-Su Borough from the Mat-Su Approach, FHWA acknowledges that there is potential for indirect effects in the Mat-Su Borough due to land development caused by construction of the KAC Project, which may affect historic properties. FHWA has provided additional funding to the Mat-Su Borough to verify through field investigations the <i>Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough</i>, originally funded through the CLG Program Historic Preservation Plans in 2006. The field investigations assist Mat-Su Borough in their efforts to establish historic preservation planning and management “tools” that guide future land use, historic preservation, and development in areas under their jurisdiction.</p> <p>FHWA negotiated and entered into a MOU with the Mat-Su Borough for field verification of sensitivity areas identified in the Mat-Su Borough preservation plan. Mat-Su Borough coordinates the field test verification with the Tribes pursuant to Stipulation IV.A.2, <i>Tribal Traditional, Religious and Cultural Preservation</i>. In support of the Mat-Su Borough Historic Preservation Plan, FHWA also provided funding to the SHPO for Geographic Information System (GIS) data entry related to the electronic conversion of the Alaska Heritage Resources Survey (AHRs) inventory database in the Mat-Su Borough. FHWA also provided funding to Mat-Su Borough to incorporate AHRs data into Mat-Su Borough’s GIS system.</p>
319	9	Bittner	DNR OHA	The potential impacts to historic properties in downtown, Ship Creek, Fairview and Midtown are not mentioned in the document.	<p>The EIS identified an Area of Potential Effect (APE) that included Ship Creek and a portion of Downtown Anchorage. As agreed to by consulting parties, including the State Historic Preservation Office (SHPO), the PA was developed through</p>

					<p>the Section 106 process, which addresses historic properties in Downtown Anchorage, Ship Creek, and Fairview, but did not include Midtown. The PA stipulated that MOA will receive assistance for historic preservation planning under Stipulation IV.A,3:</p> <p>Federal Highway Administration (FHWA) will provide funding to the MOA to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed below in Stipulation IV.A.3.b), Downtown, South Addition, and Fairview (Appendix F, <i>Community Council District Boundaries</i>), and provide for the South Addition historic property baseline inventory. Not later than six (6) months after the date of this PA, FHWA shall negotiate and enter into a MOU with the MOA to fund these Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management “tools” that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., <i>Final Environmental Impact Statement (Final EIS) Traffic Impacts</i>. In addition to new funding, the MOA will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The MOA shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the ROD.</p> <p>The PA also states (Stipulation IX.C) that “FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>.” All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts.</p>
319	10	Bittner	DNR OHA	<p>With the preferred alternative, we recommend using the listed mitigation in the FEIS and adding \$1 million for historic preservation in the Matanuska Susitna Borough and \$1 million for historic preservation in Anchorage and funding the Anchorage Historic Preservation Officer position for three years to administer this fund.</p>	<p>The comment suggests increasing funding by an additional \$2 million for historic preservation efforts in Anchorage and the Mat-Su Borough.</p> <p>\$2.2 million has been committed to date for planning and Section 106 activities for Anchorage and the Mat-Su. The portion of funds dedicated to mitigation has been determined to be reasonable by the signatories to the PA.</p> <p>As part of the Section 106 process, a new Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final Environmental Impact Statement (Final EIS)</i> upon which this comment was based. Consulting parties referred to in the PA include the signatories, invited signatory, and the concurring parties. The process included additional consultation with the signatories, which include Alaska State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), Elmendorf Air Force Base (Elmendorf), and Federal Highway Administration (FHWA); the invited signatory, which is KABATA; and concurring parties, which are Knikatnu, Inc., Eklutna, Inc., Knik Tribal Council, Native Village of Eklutna, Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Government Hill Community Council (GHCC), Anchorage Historic Properties, Inc. (AHP), Alaska Association for Historic Preservation (AAHP), and Anchorage Historic Preservation Commission (AHP).</p> <p>In the PA under Stipulation III, <i>Mitigation Measures</i>, specific mitigation measures are outlined for impacts to resources in the MOA and Mat-Su Borough including historic preservation planning assistance. The PA is written to focus on the impacted resources, the process for notification should there be unforeseen impacts, and the roles and responsibilities of the Consulting Parties.</p> <p>In Stipulation V, <i>Development of Standard Mitigation Agreements (SMAs)</i>, the PA states that based upon the information developed in accordance with the MOUs with the MOA, Mat-Su Borough, SHPO, and the Tribes, FHWA, in consultation with the SHPO, and other consulting parties, as appropriate, shall determine the need to develop and implement additional mitigation measures for both Phase 1 and Phase 2 of the KAC Project.</p> <p>FHWA shall use MOUs to carry out Stipulation III.G, <i>Government Hill Neighborhood Plan</i>, and Stipulation IV.A, <i>Certified Local Government Historic Preservation Plans</i> and Stipulation IV.A.2, <i>Tribal Traditional, Religious, and Cultural Preservation</i> and as a continuation of the financial investment that has already been made to the MOA and the Mat-Su Borough to address adverse impacts that have been identified during the Section 106 process. FHWA will use information developed under the terms of the separate MOUs as guidance to negotiate SMAs and other mitigation required per the terms of this PA for Phase 1 and Phase 2.</p> <p>Stipulation IV, <i>Additional Mitigation Measures for Indirect Effects</i>, of the PA provides staff to Mat-Su Borough and to the Tribes to assist in preservation planning efforts. The PA also provides assistance to the MOA for historic preservation planning and to Government Hill for neighborhood planning. The PA also provides for a KABATA Liaison to assist all Consulting Parties in the implementation of the PA. FHWA and ACHP believe this is the most sustainable method for implementing the PA.</p> <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts.</p>
320	1	Walton	Public	<p>In December of 2005, the community of Government Hill worked with KABATA in a two-day Context Sensitive Design meeting. This meeting was not mentioned in any way in the Final EIS, nor any of the requests for mitigation from the community. Among those requests were that anyone who shares a boundary line with a condemned home should have the choice of having their own home condemned in the process. Also, there were many conditions requested by the neighborhood regarding safety, noise control, etc.</p>	<p>The comment states that “the community of Government Hill worked with KABATA in a two-day Context Sensitive Design meeting This meeting was not mentioned in any way in the Final EIS, nor any of the requests for mitigation from the community.”</p> <p>The December 2005 Context Sensitive Mitigation (CSM) meeting was mentioned in the <i>Final Environmental Impact Statement (Final EIS)</i>. The CSM meeting is included in Section 7.9 and Section 8.3 of the <i>Final EIS</i>. Further, Appendix J includes meeting notes from the two-day workshop. Mitigation requests outlined by the Government Hill Community Council (GHCC) during the Context Sensitive Design meeting are also included in the <i>Final EIS</i> Appendix J and in <i>Draft</i></p>

					<p><i>Environmental Impact Statement (Draft EIS)</i> comment record (see comments 112-3 to 112-8).</p> <p>The comment notes that some Government Hill property owners want to be able to request condemnation if they are close to the Anchorage Approach.</p> <p>Condemnation is the legal process of acquiring private property for public use or purpose through the agency's power of eminent domain. Condemnation is usually not used until all reasonable attempts to reach a mutually satisfactory agreement through negotiations have failed. An agency then goes to court to acquire the needed property. Legally, it is not possible to condemn property, unless it is determined that the property is needed for the project's purposes. If the property is not needed for right-of-way (ROW) or a related project need, it would not be acquired through eminent domain. The commenter may be asking, instead, about "acquisition" of property needed for the project. If the project's design changes, additional property may need to be acquired.</p> <p>Mitigation commitments to address the impacts in the Government Hill community can be found the <i>Final EIS</i> in Section 4.2.1.3.3 and Table 4-52, and include commitments to:</p> <ul style="list-style-type: none">• Provide fair compensation to adversely affected residents under the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and the Alaska Relocation Assistance and Real Property Acquisition Practices, Alaska Statutes (AS) § 34.60.010 et seq.• Use best management practices to minimize noise pollution• Provide safe access to school during construction• Continue CSM during the design phase of the project to further identify additional measures to reduce impacts to Government Hill. <p>Many of the conditions requested by the Government Hill Neighborhood are covered in the PA. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHP), Anchorage Historic Properties, Inc. (AHP), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project.</p> <p>Consulting parties referred to in the PA include the signatories, invited signatory, and the concurring parties. The signatories are SHPO, ACHP, Elmendorf, and FHWA; the invited signatory is KABATA; and concurring parties are Knikatu, Inc., Eklutna, Inc., Knik Tribal Council, Native Village of Eklutna, MOA, Mat-Su Borough, GHCC, AHP, AAHP, and AHP.</p> <p>The PA was executed by the signatories in December 2008. Stipulation III of the PA includes mitigation measures for Government Hill.</p> <ul style="list-style-type: none">• Stipulation III.E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.• In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns <i>Construction of a Cut-and-Cover Tunnel on Government Hill</i> and the mitigations such as CSM that are necessary to minimize community impacts. <p>All of the signatories agreed the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts. To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p>
320	2	Walton	Public	<p>Further, the design for the Erickson corridor route does not have the homes that are right next to the construction zone having any type of permanent or temporary relocation. This was also discussed at the CSD meeting and was ignored in the Final EIS. There is no plan in the Final EIS for those homeowners that are so close to the construction zone that they will not be able to live in their homes during this time.</p>	<p>The comment is correct that there is no plan in the <i>Final Environmental Impact Statement (Final EIS)</i> for those homeowners that are close to, but not part of the construction zone to be permanently or temporarily relocated.</p> <p>The right-of-way (ROW) taking of the first row of houses on Erickson Street will create a buffer between the project and remaining adjoining houses. The remaining houses adjacent to the cut-and-cover tunnel construction will be approximately 75 to 100 feet from the limits of the cut-and-cover tunnel construction so it is not anticipated that additional relocations will be required.</p> <p>In addition, Stipulation III.H of the PA commits the Federal Highway Administration (FHWA) to "consult and collaborate with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts." Further, Stipulation III.K says,</p> <p>FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1</p>

					and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.
320	3	Walton	Public	Finally, only two houses and one hotel on Erickson Street are listed for condemnation in the design plan. This is not feasible, as those houses that will be condemned are only 10 feet away from other houses and those houses are not mentioned in any way as far as temporary removal, condemnation, or compensation.	<p>The comment states that “only two houses and one hotel on Erickson Street are listed for condemnation in the design plan” and that house only 10 feet away are not mentioned.</p> <p>The houses are not mentioned because they will not be removed or condemned, and the residents will not be temporarily relocated. The right-of-way (ROW) taking of the first row of houses on Erickson Street will create a buffer between the project and remaining adjoining houses. The remaining houses adjacent to the cut-and-cover tunnel construction will be approximately 75 to 100 feet removed from the limits of the cut-and-cover tunnel construction so it is not anticipated that additional relocations will be required.</p> <p>Stipulation III.H of the PA commits the Federal Highway Administration (FHWA) to “consult and collaborate with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.” Further, Stipulation III.K says,</p> <p>FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.</p>
321	1	Dutton	Defenders of Wildlife	There are a number of impacts to the Cook Inlet's beluga whale that will result from the construction and operation of the proposed Knik Arm Bridge that are of serious concern, yet the FEIS understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale to extinction.	<p>The comment states that “There are a number of impacts to the Cook Inlet's beluga whale that will result from the construction and operation of the proposed Knik Arm Bridge that are of serious concern, yet the FEIS understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale to extinction.”</p> <p>The <i>Final Environmental Impact Statement (Final EIS)</i> concisely provides potential direct, construction, indirect, and cumulative impacts to belugas, and cites throughout the best available scientific information (<i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> [LGL Alaska Research Associates, Inc., 2005]; <i>Options for Mitigating Construction-Related Effects on Beluga Whales</i> [LGL Alaska Research Associates, Inc., 2005]; and “Investigation of Beluga Whales in Coastal Waters of Western and Northern Alaska, III” [<i>Food Habitats</i>, p. 24; etc., L. F. Lowry, K. J. Frost, and G. A. Seaman, 1985]).</p> <p>KABATA and the Federal Highway Administration (FHWA) are working closely with National Marine Fisheries Service (NMFS) to understand the challenges and avoid, minimize, and mitigate impacts to the whales. Coordination with NMFS has been ongoing during the project development and will continue during the design and permitting phases of the project.</p> <p>As a part of the National Environmental Policy Act (NEPA) process, KABATA conducted and reported on a year-long Knik Arm beluga whale study. In addition, direct, construction, indirect, and cumulative impacts to belugas were reported in detail in the <i>Final EIS</i>. Some studies are ongoing.</p> <p>As part of ongoing discussions with NMFS since the publication of the <i>Final EIS</i>, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was for the project team to get feedback from NMFS about the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on ESA and MMPA processes run concurrently.</p>
321	2	Dutton	Defenders of Wildlife	<p>The FEIS also fails to address adequately the numerous comments highlighting the significant flaws in the DEIS. See, e.g., NMFS, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2006) (NMFS 2006); Marine Mammal Commission, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2007) (MMC 2006); Department of the Interior, Comments on the Knik Arm Crossing Draft EIS (Nov. 17, 2007) (DOI 2006). Thus, while the FHWA has generally "identified the relevant environmental concern," Grand Canyon Trust, 290 F.3d at 340-41, it has failed to take a "hard look" at those issues. National Wildlife Federation v. Norton, 332 F. Supp.2d 170, 182 (D.D.C. 2004; see also Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 508 F.3d 508, 526-27 (9th Cir. 2007) (Agency FEIS violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the proposed bridge).</p> <p>The FEIS unquestionably falls short of the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq. We specifically write to address the significant impacts this project will have on the Cook Inlet beluga whale, which are not fully addressed in the FEIS.</p>	<p>The Federal Highway Administration (FHWA) agrees that it is required to and has taken a hard look at impacts that are derived from the project, and it has done so in the EIS. FHWA has continued its hard look at impacts after the <i>Final Environmental Impact Statement (Final EIS)</i> through analyses such as Section 106 Programmatic Agreements (PA), Endangered Species Act (ESA) Section 7 consultation, and request for Letter of Authorization (LOA) under the Marine Mammal Protection Act (MMPA).</p> <p>The FHWA and KABATA followed all National Environmental Policy Act (NEPA) requirements in preparing the EIS. As specified in 42 U.S.C. § 4332.2.C, the <i>Draft Environmental Impact Statement (Draft EIS)</i> and <i>Final EIS</i> include a detailed statements on—</p> <p>(i) the environmental impact of the proposed action, (ii) any adverse environmental effects that cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.</p>

				<p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, FHWA and KABATA have worked with the National Marine Fishery Service (NMFS) to identify issues of environmental concern and to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales has been underway since before the Cook Inlet DPS became listed under the Endangered Species Act in October 2008. This early agency involvement was a result of beluga whale protection under the Marine Mammal Protection Act of 1972 (MMPA) and project development through NEPA, with NMFS serving as a Cooperating Agency for the EIS. Beluga whale habitat was a key constraint that shaped the project study area and the location of alternatives developed for the proposed Crossing. Potential impacts to beluga whales (found in Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i>) were based on the best available science and consultations with beluga whale experts.</p> <p>Extensive project-specific fieldwork and research, performed in close coordination with the Alaska office of the NMFS, was conducted to supplement and expand the existing knowledge of the Cook Inlet beluga whale. Information from the full year of field surveys and other published data can be found in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> [LGL Alaska Research Associates, Inc., 2005], and the <i>Cumulative Effects Technical Report</i> [KATABA, 2006].</p> <p>FHWA and KABATA also responded to all substantive comments received on the <i>Draft EIS</i>. In addition to responding to the NMFS comments on the <i>Draft EIS</i> (provided in Appendix L of the <i>Final EIS</i>), FHWA responded to specific NMFS comments in a letter dated July 3, 2007 (included in Appendix F of the <i>Final EIS</i>), that provided additional information in response to NMFS's concerns.</p> <p>As stated in the response to Comment 321-1, since the <i>Final EIS</i>, and as part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was for the project team to get feedback from NMFS about the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible "takes"), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to National Marine Fisheries Service in July and August 2010. Consultation on Endangered Species Act and Marine Mammal Protection Act processes run concurrently.</p> <p>In response to the BA, NMFS issued a Biological Opinion (BO) for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 which states: "NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat. ... Although we conclude the project is not likely to jeopardize the continued existence of this species, we remain concerned about the potential additive effects of development projects within the habitat of these endangered whales. Conservation recommendations are provided with the opinion which are intended to mitigate potential adverse effects, and we continue to encourage FHA to fully consider and exercise its responsibilities under section 7(a)(1) of the Act. Because critical habitat has not been designated for the Cook Inlet beluga whale, this document will be a conference opinion on the Knik Arm Crossing as it concerns proposed critical habitat. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales, NMFS will issue a letter confirming this conference <i>opinion to be the biological opinion for this critical habitat</i> (See Appendix C for the complete NMFS BO).</p> <p>In the BO, NMFS concurred with all of the mitigative measures identified in the FHWA BA, but clarified that: "<i>We note that some of the measures proposed by KABATA and FHA are not specific or do not include detailed descriptions. NMFS will coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>". FHWA and KABATA will implement the mitigation measures listed in the BO, which are:</p> <ul style="list-style-type: none">• using drilled-shaft technology for the large-diameter, permanent bridge piers as opposed to driven piles originally proposed in the KAC EIS, significantly reducing in-water noise exposure• increasing bridge span lengths from the 250-foot spans discussed in the KAC DEIS to 275-foot spans, reducing the number of bridge piers from 33 to 29• scheduling temporary pile-construction activities when beluga whales are not in Knik Arm or the KAC project area in large numbers (specifically, between December 1 and July 31)• implementing a soft-start application for initial pile-driving operations• avoiding simultaneous installation and/or removal for moorage, dock, and template piles in different locations (Exception: Whenever beluga whales are not present in the project area and weather conditions are favorable, KABATA will however, coordinate with NMFS to determine whether pile driving at multiple locations would be acceptable to minimize the project's in-water duration of disturbance.)• monitoring construction-related acoustics to determine appropriate safety zones around pile-driving activities• implementing a multiple-observer monitoring program with mandatory shut-down procedures to avoid injury and minimize potential harassment to beluga whales• implementing a construction contractor specification to maximize vessel-free beluga passage zones during construction• implementing NMFS vessel operation guidelines to minimize construction vessel operation impacts• implementing measures to protect water quality and flows in receiving waters• focusing mitigation for fill impacts required for roadway approach construction to maximize fishery enhancements in Knik Arm
--	--	--	--	--

					<ul style="list-style-type: none">preventing the construction of a boat launch ramp facility in association with the project so that no direct access to tidelands is provideddeveloping an Adaptive Management Plan in close coordination with NMFS <p>NMFS also proposed four additional discretionary conservation recommendations to further avoid and minimize adverse effects:</p> <ol style="list-style-type: none">“1. KABATA should revise their crossing design to decrease the length of the eastern abutment fill by approximately 800 feet, or to Station 810+00 as depicted in the November 2009 Proof of Concept Geological Section. This action would reduce the loss of critical habitat and present fewer long-term impacts to beluga whales which utilize the near shore areas of Knik Arm along this shoreline.KABATA or DOT should develop and implement a noise-reduction protocol for vessels. This plan should consider operational and engineering opportunities to reduce noise and may include such measures as using gaskets to isolate noise sources (e.g. engines, generators, winches), using moorings rather than propellers to maintain position, using non-powered barges and platforms in lieu of powered vessels, vessel speed limitations, access points, and travel corridors.KABAT A or DOT should halt impact and vibratory pile driving during the month of May within two (2) hours either side of low tide to reduce the exposure of beluga whales to this noise source during the spring eulachon migration.KABATA or DOT should develop a vessel operator beluga whale awareness briefing and operational practices to reduce the effects of construction vessels on these whales. KABATA and/or DOT should consult with NMFS to develop this program and information.” <p>As per NMFS recommendations cited above under mitigation measures to “... <i>coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>”, FHWA and KABATA are committed to continued coordination with NMFS as the design phase of the project is developed and more information becomes available to evaluate these discretionary conservation recommendations in the attempt to further avoid and minimize adverse effects to the beluga whale.</p>
321	3	Dutton	Defenders of Wildlife	To begin with, Marine Mammal Commission (MMC) commented previously that "some of the optimistic conclusions made in the DEIS may stem from a basic misunderstanding of the status of the Cook Inlet whale." MMC 2006, at 2. This has not been addressed in the FEIS. Specifically, the FEIS still states that "[f]or the past several years the [beluga whale] population was thought to have stabilized, with an estimated 300-500 beluga whales now inhabit Cook Inlet." See FEIS, 3-211. This summary is patently inconsistent with the conclusions reached by IUCN-The World Conservation Union, which determined that the population is "critically endangered." Lowry, L., G. O'Corry-Crow, and D. Goodman. 2006. <i>Delphinapterus leucas</i> (Cook Inlet Population). In IUCN 2006. 2006 IUCN Red List of Threatened Species. Indeed, despite properly acknowledging that the population continues decline, the FEIS fails to mention the IUCN's conclusion that "the underlying growth rate is so low that there is a 71% probability that if present conditions persist the population cannot withstand any take, and will decline in the future."	<p>The comment states that some conclusions about the Cook Inlet beluga whale are optimistic and that this leads to misunderstanding of its status.</p> <p>In the <i>Final Environmental Impact Statement (Final EIS)</i> it states “Based on the 2006 population estimates completed by the National Marine Mammal Laboratory (NMML), the population is currently estimated at 302 individuals (95 percent confidence limits, 200–410; NOAA Fisheries, 2007). This estimate is slightly higher than the previous year’s estimate of 278 individuals (95 percent confidence limits, 194–398; NOAA Fisheries, 2006). Lowery et al. (2006) suggests there is a 71 percent probability that the population growth rate of Cook Inlet beluga whales is negative, with the best estimate indicating that the population is declining by 1.2 percent per year. However, NOAA Fisheries estimates that from 1999–2006 annual estimates indicate an average decline of 4.1 percent per year (NOAA Fisheries, 2007).”</p> <p>The population estimates used in the <i>Draft Environmental Impact Statement (Draft EIS)</i> and Final Environmental Impact Statement (<i>Final EIS</i>) were established by the National Marine Fishery Service (NMFS). According to NMFS, It is currently unknown what factor or factors constrain growth of the population, because it may be affected by various natural and anthropogenic factors and interaction of factors, including subsistence harvest removals, pollution, predation, disease, contamination, fisheries interactions, vessel traffic, small stock size, restricted summer range, and habitat alteration (<i>Conservation plan for the Cook Inlet beluga whale (Delphinapterus leucas)</i> [NOAA Fisheries, 2008]).</p> <p>The estimate of 300–500 whales is within the statistical range. For instance, the Lowry et al. paper referenced by the commenter references other studies on the Cook Inlet beluga population that reported the following population estimates: 386 in 2001, 313 in 2002, 357 in 2003, 366 in 2004, and 278 in 2005 (D. Rugh and R. Hobbs, pers. comm.); L. Lowry, G. O’Corry-Crowe, and D. Goodman, 2006; “<i>Delphinapterus leucas</i> [<i>Cook Inlet population</i>]”, in <i>IUCN 2006</i>, 2006 IUCN Red List of Threatened Species, <http://www.fakr.noaa.gov/protectedresources/whales/beluga/icun_belugarpt.pdf>, accessed June 18, 2010. The latest NMFS estimate of abundance for the Cook Inlet beluga whale is 321 (Hobbs et al., 2009).</p> <p>The comment says that the “<i>Final EIS</i> fails to mention the IUCN's conclusion ...”about the Cook Inlet beluga whale population growth rate.</p> <p>The information cited by the IUCN, a primarily Europe-based organization, was incorporated into NMFS’s recommendation to designate Cook Inlet belugas as "depleted" under the U.S. Marine Mammal Protection Act (MMPA) and as "endangered" under the U.S. Endangered Species Act (ESA). The Federal Highway Administration (FHWA) and KABATA addressed the MMPA and proposed the ESA designations in the <i>Final EIS</i>.</p> <p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, FHWA and KABATA have coordinated with NMFS to identify data gaps and develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales has been underway since before the Cook Inlet DPS became ESA-listed in October 2008. This early agency involvement was a result of beluga whale protection under the MMPA and project development through NEPA, with NMFS serving as a Cooperating Agency for the <i>Final EIS</i>.</p>

					<p>As a result of coordination with the Alaska office of NMFS, KABATA conducted extensive project-specific fieldwork and research to supplement and expand the existing knowledge of the Cook Inlet beluga whale. Information from the full year of field surveys and other published data can be found in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> [LGL Alaska Research Associates, Inc., 2005], and the <i>Cumulative Effects Technical Report</i> [KABATA, 2006].</p> <p>Potential impacts to beluga whales (found in Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i>) were based on the best available science and consultations with beluga whale experts.</p> <p>As part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was to address potential impacts of the project on the beluga. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation.</p> <p>Sections 10(a)(1)(A) and (B) of the ESA authorize NMFS to grant exceptions to the ESA’s Section 9 “take” prohibitions. Section 101(a)(5) (A-D) of the Marine Mammal Protection Act of 1972 (MMPA), as amended (16 U.S.C. 1371(a)(5)), provides a mechanism for allowing, upon request, the "incidental", but not intentional, taking, of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographic region. Both Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i> outline steps to reduce or minimize activities that could result in takes of beluga whales during construction; the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA include additional measures. Coordination with NMFS has been ongoing during the project development and will continue during the design and permitting phases of the project to establish enforceable protective measures and determine what level of takes, if any, may be allowed. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p>
321	4	Dutton	Defenders of Wildlife	<p>Furthermore, the FEIS provides little justification for the conclusions reached about the beluga's use of the project site and the Knik Arm generally. The Knik Arm Bridge and Toll Authority (KABATA) has conducted a one-year study of beluga whale movements in Knik Arm and at the proposed construction site, through LGL Alaska Research Associates, Inc. FEIS, at 3-212 (LGL 2006). The limited scope of this study, however, undermines the conclusions drawn by FHWA about beluga whale habitat-use patterns in and around Knik Arm. See MMC 2006, at 3. As the MMC notes, "at least some of the results of the LGL 2006 report may not be as clear-cut as portrayed" by the FHWA and thus the conclusions "may be an artifact of several possible biases in the studies." Relying principally on the LGL 2006 report ignores other available information which demonstrates that not only is the entire reach of the Knik Arm important habitat for beluga whale feeding, resting, and predator avoidance but should be considered a "high-use area." See MMC 2006, at</p> <p>4. Given the FHWA's failure to describe properly the beluga’s use of the Knik Arm--or the true status of the species, and its vulnerability to the effects of the project--the FEIS predictably misstates the potential impacts of the bridge's construction on the species. For example, the FEIS fails to address fully the potential direct impacts of bridge construction on the whale's behavior in the vicinity of the bridge. See FEIS, 4-251-252. The assertion that the bridge and construction activities will affect beluga "more" than other activities, such as feeding or resting, simply because "most of the whale sightings within the Study Area were associated with whales transiting in and out of the Knik Arm" highlights the unreliability of assumptions made based on the LGL report. Indeed, as the MMC noted in its comments on the DEIS, "data presented . . . show a substantial amount of observed resting and feeding activity at the two sites closest to the project area." MMC 2006, at 4-5. Had FHWA properly accounted for the whale's use of the construction site, rather than dismissing these impacts, the FHWA could have fully addressed the impact on whale behavior and the resulting impact on the population as a whole.</p> <p>The Cook Inlet beluga whale faces a suite of risks. The limited knowledge of this population’s ecology, life history, and reproductive potential, as well as the uncertainty regarding current factors adversely affecting the population and its habitat require that any action that may cause the population additional stress be approached with extreme caution and rejected if it is possible that the species will be driven further to the brink of extinction. The Knik Arm Bridge is such a proposal. Yet, the FHWA has not addressed fully the potential impacts this project will have on the whale, and as a result, before any decision take may affect the whale can be made, FHWA must confer with NMFS and produce a Supplemental EIS. The Cook Inlet beluga, however, most likely cannot withstand the impact associated with the bridge; the FHWA's limited and incomplete analysis demonstrates as much.</p> <p>At a minimum before proceeding with an action that may irreparably harm the already critically imperiled Cook Inlet beluga whale, the FHWA must complete a supplemental Environmental Impact Statement which fully considers the issues raised prior to the DEIS and below.</p>	<p>The comment states that “the FEIS provides little justification for the conclusions reached about the beluga’s use of the project site and the Knik Arm generally. The Knik Arm Bridge and Toll Authority (KABATA) has conducted a one-year study of beluga whale movements in Knik Arm and at the proposed construction site, through LGL Alaska Research Associates, Inc., FEIS, at 3-212 (LGL 2006).” The comment further states that the limited scope of this study undermines the conclusions drawn by FHWA about beluga whale habitat-use patterns in and around Knik Arm.</p> <p>Although KABATA’s <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> (LGL Alaska Research Associates, Inc., 2005) represents data collected over a single year, similar work on other projects during previous and subsequent years has confirmed the general patterns of habitat use in the area. For example, including the KABATA study year, a similar pattern of habitat use was observed during National Marine Fisheries Service (NMFS) aerial surveys of beluga whales in Cook Inlet, which confirms the conclusions made in the <i>Final Environmental Impact Statement (Final EIS)</i> about the use of Knik Arm by beluga whales. NMFS aerial survey data reveal that Cook Inlet beluga whales exhibit interannual variability in their use of Knik Arm. The proportion of the Cook Inlet population using Knik Arm during annual NMFS aerial surveys conducted during June through July 1993 through 2006 was zero to 61 percent, with a mean of 23 percent. From 2006 through 2009, zero to 34 percent of the beluga whale population in Cook Inlet used Knik Arm. Additional information on KABATA’s Cook Inlet beluga research reports and data can be found the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska July 2004–July 2005</i>, (LGL Alaska Research Associates, Inc., 2005), and the <i>Cumulative Effects Technical Report</i> (KABATA, 2006).</p> <p>The comment says that FHWA relied “principally on the LGL 2006 report [and] ignores other available information ...” The comment further describes the LGL report as “unreliable.”</p> <p>Due to the inadequacy of available data, KABATA hired an independent third party consultant to obtain additional current data on the beluga whale. Many other sources of information about the beluga whale, and specifically the Cook Inlet beluga whale, have been used to determine their use of Knik Arm and the potential effects of the KAC Project. In addition to project-specific fieldwork, extensive research was performed in close coordination with the Alaska office of the NMFS to supplement and expand the existing knowledge of the Cook Inlet beluga whale. This research is documented in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> (LGL Alaska Research Associates, Inc., 2005), and the <i>Cumulative Effects Technical Report</i> (KABATA, 2006).</p> <p>The comment further states “FHWA’s failure to describe properly the beluga's use of the Knik Arm--or the true status of the species, and its vulnerability to the effects of the project--the FEIS predictably misstates the potential impacts of the bridge's construction on the species.”</p> <p>NMFS issued proposed rules for beluga whale critical habitat in December 2009, which proposed two areas totaling 3,016 miles of critical habitat. NMFS stratified Cook Inlet into three beluga whale “valuable” habitat regions. The Crossing is located in Area 1 of the proposed critical habitat. Belugas primarily use the Crossing corridor as a travelling route to gain access to important feeding habitats in upper Knik Arm (Markowitz, Funk, et al., “Use of Knik Arm Crossing</p>

					<p>Corridor,” 2005). Beluga whales are also known to dive and feed in the Crossing corridor, although to a lesser extent than their traveling behavior (Markowitz, Funk, et al., “Use of Knik Arm Crossing Corridor,” 2005). Habitat adjacent to the approaches will continue to be available for feeding and diving. Final design and construction methodology have not been determined, and additional coordination with NMFS will continue throughout the design and permitting phases of the project. The contract specifications and plans will include limitations to bring the impacts on beluga whales within the allowable limits as determined by NMFS through the Biological Assessment (BA) Section 7 consultation process and the Marine Mammal Protection Act of 1972 (MMPA) process. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p> <p>The comment states “Had FHWA properly accounted for the whale's use of the construction site, rather than dismissing these impacts, the FHWA could have fully addressed the impact on whale behavior and the resulting impact on the population as a whole.”</p> <p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project the Federal Highway Administration (FHWA) and KABATA have worked with NMFS to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales has been underway since before the Cook Inlet DPS became listed under the Endangered Species Act in October 2008. This early agency involvement was a result of beluga whale protection under the MMPA and project development through the NEPA, with NMFS serving as a Cooperating Agency for the EIS. Beluga whale habitat was a key constraint that shaped the project study area and the location of alternatives developed for the proposed Crossing. Potential impacts to beluga whales (found in Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i>) were based on the best available science and consultations with beluga whale experts and include potential impacts from construction, pile driving, fill placement, and indirect impacts.</p> <p>Both Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i> outline steps to reduce or minimize activities that could result in takes of beluga whales during construction. The Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA include additional measures that take into account the potential impacts the project will have on the beluga whale including reasonably foreseeable future actions that would not otherwise have ESA coordination due to a lack of federal nexus.</p> <p>As part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was to address potential impacts of the project on the beluga whale. The project team received feedback from NMFS about the BA and LOA documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on ESA and MMPA processes run concurrently. Additional coordination with NMFS will continue throughout the design and permitting phases of the project.</p> <p>The comment states “the FHWA must complete a supplemental Environmental Impact Statement ...”</p> <p>Potential adverse impacts on the beluga whale will be mitigated by conditions imposed on construction by the LOA, BO, as well as those mitigation measures stated in the <i>Final EIS</i> at Sections 4.8.8.2.2, 4.8.8.2.3, and 4.8.8.4.2, and Section 4.11. FHWA has reevaluated the project and determined a supplemental EIS is not warranted.</p>
321	5	Dutton	Defenders of Wildlife	<p>The FEIS's shortcomings are not solely based on the FHWA's misinterpretation of the whale's status, however. The FEIS also fails to address the many direct impacts the project will have on the species. For example, the project could directly impact beluga prey species. Beluga whales depend on the health of anadromous fish runs in Cook Inlet. These runs, already threatened by continued development, and by the loss of upland habitat in Cook Inlet that is important for the health of anadromous streams, will be impacted by the project. See, e.g., FEIS, at 4-231. However, the FEIS fails to discuss the impact this may have on the belugas which use the Knik Arm as a primary feeding area. FEIS, at 4-252 (concluding “Because fish passage would not be expected to be adversely affected by the bridge abutments, no adverse impacts to beluga foraging would be expected.”); see also NMFS 2006, at 2 (“The proposed bridge would adversely affect habitat for Pacific salmon in Knik Arm”); DOI 2006, at 5-6. Further highlighting the potential impact on the beluga, NMFS has also noted that the “nutritional effects due to the loss of Knik Arm salmon as a prey source and the competition for the few remaining preferred feeding habitat areas in the upper Inlet could substantially reduce the potential for recovery of this depleted population.” NMFS 2006, at 1</p>	<p>The comment expresses concern about impacts to the beluga whale's prey species.</p> <p>The best available scientific information was used to develop the discussion of potential construction, direct, indirect, and cumulative impacts to beluga whales and other areas of concern. Chapter 4 of the <i>Final Environmental Impact Statement (Final EIS)</i> addresses direct, indirect, and cumulative impacts from the project, including land use, farmland, transportation, community facilities, subsistence, natural environment, floodplains, the coastal zone, and marine, freshwater, and terrestrial habitats. Impacts to anadromous fish are included in Section 4.8.8.2 of the <i>Final EIS</i>; measures to avoid impacts are included in Section 4.12 of the <i>Final EIS</i>. Additional data from other documented research can be found in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska July 2004–July 2005</i> (LGL Alaska Research Associates, Inc., 2005), and the <i>Cumulative Effects Technical Report</i> (KABATA, 2006). The Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) include additional measures that take into account the potential impacts the project will have on the beluga whale, including reasonably foreseeable future actions that would not otherwise have ESA coordination due to a lack of federal nexus.</p> <p>Project-specific fisheries studies were conducted that take impacts to beluga prey species into account (such as <i>Knik Arm Crossing Essential Fish Habitat Assessment</i> [KABATA, 2006]). Most of the fish with designated Essential Fish Habitat (EFH) within the study area are also important sport or commercial fishery species within Cook Inlet. One finding of the EFH suggested the proposed bridge approaches would force migrating adult salmon into deeper, faster waters where they might be more susceptible to beluga predation. The EFH report, which also identifies potential direct, indirect, and cumulative impacts to EFH from the project can be found, in its entirety, in Appendix F of the <i>Final EIS</i>.</p>

					Scientific monitoring during construction will help to determine the impacts associated with beluga prey. FHWA and KABATA will mitigate the KAC project's adverse impacts on the prey species of the Cook Inlet beluga whale as part of overall compensatory mitigation for wetlands and water bodies through use of the Anchorage Debit/Credit Methodology. Fisheries enhancement mitigation approaches being considered by FHWA and KABATA for anadromous waterways or waters in the Anchorage Bowl and Mat-Su area include habitat and conservation, improvement of fish passage, and stock enhancement.
321	6	Dutton	Defenders of Wildlife	Similarly, the FEIS fails to address properly the potential for both short-term and long-term harm and harassment to the beluga from construction noise. As the FEIS notes, the adverse effects of construction activities could include "avoidance, changes in resting or feeding cycles, displacement from habitat, alertness, masking of sounds and changes in vocal behavior, changes in swimming or diving behavior, altered direction of movement, and physical injury." FEIS, at 4-252. Acknowledging these impacts, the FHWA then concludes generally the "[d]isplacement of beluga whales by noise would not be permanent and would not be expected to have long-term effects." Id. This conclusion is wholly unsupported. The Cook Inlet beluga whales are particularly adapted to the "turbid and regularly darkened waters of the Cook Inlet and are almost wholly dependent on their acoustic environment." NMFS 2006, at 1. Accordingly, as NMFS points out: "Man-made noise has the capacity to harass and injure these whales." Id. (emphasis added). NMFS, unlike the FHWA, recognized that "[a]ny change in the use of Knik Arm by beluga whales, and especially the upper Arm, due to the Knik Arm bridge would be expected to have direct and measurable adverse effects on this population." Id. (emphasis added).	<p>The comment states that the <i>Final Environmental Impact Statement (Final EIS)</i> failed to address the potential short-term and long term effects that could harm or harass beluga whales from construction noise.</p> <p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, the Federal Highway Administration (FHWA) and KABATA have worked with the National Marine Fishery Service (NMFS) to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. KABATA and FHWA worked closely with NMFS to avoid, minimize, and mitigate potential impacts to the Cook Inlet beluga whales—particularly during construction—and has funded research on underwater measurements of pile-driving sounds during Port MacKenzie dock modifications.</p> <p>Commenter states that FHWA's conclusion that there will be no long term or permanent effects from construction noise is wholly unsupported.</p> <p>The <i>Final EIS</i> thoroughly analyzed noise impacts to the beluga whales due to construction at Section 4.8.8.4.2. There is no data available which suggests that construction noise impacts to the beluga would cause long term or permanent displacement of the beluga. FHWA has consulted NMFS through the Section 7 process on this issue.</p> <p>To address NMFS's concerns and to reduce potential takes bridge design/construction features will be adapted to address NMFS's concerns in the Final Design. In-water pile driving (temporary piles) will not occur during peak beluga density months (August through November) as a condition of the Biological Opinion (BO) as addressed below.</p> <p>Commenter also states man-made noise has the capacity to harass or injure the beluga.</p> <p>Noise from increased marine vessel activity during project construction could impact beluga whales through behavioral disturbance and displacement near the Crossing location; however, background sound levels in Knik Arm are already high because of strong currents, eddies, recreational vessel traffic, and commercial and military shipping traffic entering and leaving the Port of Anchorage (POA) (see references in the <i>Final Environmental Impact Statement [Final EIS]</i> and Biological Assessment [BA] such as Blackwell and Greene, 2002; Blackwell, 2005; URS, 2007; Scientific Fishery Systems, 2009; Širović and Saxon Kendall, 2009).</p> <p>Ambient underwater noise is highly variable, falling between 105-150 dB. The high tides and ice in Knik Arm already produce ambient noise. Proposed mitigation measures are expected to allow passage of beluga whales to other critical habitat areas during construction and additional data will be collected on levels of anticipated construction noise.</p> <p>FHWA also recognized that "[a]ny change in the use of Knik Arm by beluga whales, and especially the upper Arm, due to the Knik Arm bridge would be expected to have direct and measurable adverse effects on this population." Chapter 4 of the <i>Final EIS</i> addresses direct, indirect, and cumulative impacts from the project, including land use, farmland, transportation, community facilities, subsistence, natural environment, floodplains, the coastal zone, and marine, freshwater, and terrestrial habitats. Measures to avoid impacts are included in Section 4.12 of the <i>Final EIS</i>. Additional data from other documented research can be found in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska July 2004–July 2005</i> (LGL Alaska Research Associates, Inc., 2005), and the <i>Cumulative Effects Technical Report</i> (KABATA, 2006). The Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA) include additional measures that take into account the potential impacts the project will have on the beluga whale, including reasonably foreseeable future actions that would not otherwise have ESA coordination due to a lack of federal nexus. Although mitigation measures have been increased to avoid and minimize potential impacts through ongoing consultation with NMFS and other resource agencies, additional information and studies have <i>generally</i> supported the conclusions of the <i>Final EIS</i>.</p> <p>Since publication of the <i>Final EIS</i>, and as part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was to address potential impacts of the project on the beluga whale. The project team received feedback from NMFS about the BA and LOA documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible "takes"), critical habitat and habitat values, and possible mitigation.</p> <p>Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on ESA and MMPA processes run concurrently. Additional coordination with NMFS will continue throughout the design and permitting phases of the project. Further, as described in the LOA request, Scientific monitoring during construction will help to determine the impacts associated with beluga prey. FHWA and KABATA will mitigate the KAC project's adverse impacts on the prey species of the Cook Inlet beluga whale as part of overall compensatory mitigation for wetlands and water bodies through use of the Anchorage Debit/Credit Methodology. Fisheries enhancement mitigation approaches being considered by FHWA and KABATA for anadromous waterways or waters in the Anchorage Bowl and Mat-Su area include habitat and conservation, improvement of fish passage, and</p>

					stock enhancement. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i> , and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i> , of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i> .
321	7	Dutton	Defenders of Wildlife	Furthermore, the FEIS fails to account adequately for potential indirect impacts from the project. For example, the FEIS attempts to qualify the impact of "vehicular noise" from the bridge at 4-255. The FEIS notes that "[whales] have been regularly seen at the Port of Anchorage, approaching the Port during dredging and construction activities... and they have been seen under and near the vehicular bridge at Knik River at the head of Knik Arm."2 Id. The FEIS thus concludes that "beluga whales would be expected to adapt to the changes and may continue to use habitat in the Study Area." However, beluga whales are negatively affected by anthropogenic noise throughout the Inlet and as NMFS notes, "[o]perationally, the bridge and its supports may present a source of continuous noise." NMFS 2006, at 1. NMFS previously acknowledged that although in fact disturbed by the noise, whales may "continue to use some [noisy] areas for feeding and traveling because these areas are critical to their survival." 65 Fed. Reg. at 38,788. Moreover, there is evidence that when using these areas, the beluga's behavior has been affected. NMFS 2006, at 1 (noting that belugas seen near the Port of Anchorage have decreased surfacing intervals).	<p>The comment states that the indirect impacts of the project on beluga whales such as vehicle noise and construction noise were not adequately presented in the <i>Final Environmental Impact Statement (Final EIS)</i>. The <i>Final EIS</i> discusses indirect impacts of vehicular noise and finds that the beluga whales habituate to various types of anthropogenic activities. The Federal Highway Administration (FHWA) specifically addressed the National Marine Fishery Service's (NMFS) comments regarding vehicular noise in a letter to Ken Hollingshead dated July 3, 2007 (included in Appendix J of the <i>Final EIS</i>). That letter provides additional examples of beluga whales swimming under local bridges that are much closer to the water, have narrower spans than the proposed Knik Arm Crossing, and that have comparable traffic volumes. Alaska Department of Fish and Game (ADF&G) and NMFS personnel saw belugas swimming under the Twentymile River and Placer River bridges on the Seward Highway. Thirteen examples of belugas swimming beneath bridges have also been identified and documented in the Biological Assessment (BA) prepared for the project.</p> <p>Noise from increased marine vessel activity during project construction could affect beluga whales through behavioral disturbance and displacement near the Crossing location; however, background sound levels in Knik Arm are already high because of strong currents, eddies, recreational vessel traffic, and commercial and military shipping traffic entering and leaving the Port of Anchorage (POA) (see the <i>Final EIS</i> and BA references such as Blackwell and Greene 2002; Blackwell 2005; URS 2007; Scientific Fishery Systems 2009; Širović and Saxon Kendall 2009).</p> <p>The high tides and ice in Knik Arm produce ambient noise. Ambient underwater noise is highly variable, falling between 105-150 dB. Proposed mitigation measures are expected to allow passage of beluga whales to other critical habitat areas during construction and additional data will be collected on levels of anticipated construction noise. As part of the analysis performed to support the BA for the project, traffic noise was modeled from operation of the project. This modeling predicted that traffic noise would result in underwater noise levels of 94 dB. Since the ambient underwater noise levels in Knik Arm are much higher than this (105-150 dB), no increase to the ambient condition is predicted to occur.</p> <p>Discussions with NMFS are ongoing and FHWA hosted a coordination meeting with NMFS, ADF&G, and KABATA on January 19, 2010. The purpose of this meeting was to address potential impacts of the project on the beluga whale. The project team received feedback from NMFS about the BA and Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation.</p> <p>Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on ESA and MMPA processes run concurrently. Additional coordination with NMFS will continue throughout the design and permitting phases of the project.</p>
321	8	Dutton	Defenders of Wildlife	The FEIS also asserts, again without any justification, that shore development, triggered by the bridge's existence, will not impact the whales. Specifically, the FEIS finds that "[r]esidential, commercial and industrial development along the western shoreline of the Knik Arm" and the associated use of the shoreline, "would have no adverse impact on beluga behavior in nearshore waters." FEIS, at 4-255. NMFS, in contrast, found this type of development would result in "unquantifiable indirect impacts to these whales." NMFS 2006, at 1.	<p>The comment questions the finding reported in the <i>Final Environmental Impact Statement (Final EIS)</i> that shore development will not have an adverse impact on beluga whales, calls the statement unjustified, and asserts that indirect impacts are not quantifiable.</p> <p>The KAC Project will improve access from Anchorage to developable land in the Mat-Su, and change in accessibility will affect land markets in both Anchorage and the Mat-Su, which will cause a change in the distribution of land uses in the area.</p> <p>The comment continues saying that development on the western shoreline of the Knik Arm would result in unquantifiable indirect impacts to the beluga whales. Pollution of the beluga whale habitat is a concern with regard to their health (<i>Conservation plan for the Cook Inlet beluga whale [Delphinapterus leucas]</i>. National Marine Fisheries Service, Juneau. 2008) and could be generated by continuing development around Knik Arm.</p> <p>The two sources of pollution that would result from future land development are wastewater and stormwater runoff. Although densely populated communities are expected to be developed in a few places, it is anticipated that such communities will install community septic tank and leach field systems, or small package wastewater treatment plants. Further, the fast currents and assimilative capacity of Knik Arm and upper Cook Inlet substantially minimize the severity of water quality impacts that might result from land development indirectly resulting from implementation of the KAC Project (<i>Final EIS</i> Section 4.5.6.2). To assess (quantify) potential pollution from development in the Mat-Su, PlanBuilder was used to quantify direct and indirect impacts from expected development shifts. It is a geographic information system (GIS) planning tool designed for land use and transportation scenario creation, evaluation, and ranking—quantification of effects. It facilitates testing different land use scenarios to gauge the effects of development on various land use, environmental, and transportation performance indicators. This software provided project-specific information useful in describing indirect land use impacts of increased growth (<i>Final EIS</i> Section 4.9.4.1.1).</p> <p>PlanBuilder results showed that the project will contribute to development of approximately 10,460 acres of now-undeveloped land in the Mat-Su. Most of this land will be developed for residential use. To demonstrate the magnitude of predicted development, about 4 percent of the study area (10,260 acres) now has developed parcels. If the project were not built, about 12 percent of the study area (29,360 acres) is expected to be developed, while with the KAC</p>

					<p>Project implemented, about 16 percent (39,830 acres) will develop. More than 204,000 acres of the study area (84 percent) will remain undeveloped even with implementation of the KAC Project. With or without the KAC Project, 86,730 acres (35.5 percent) of land in the study area will be protected from development, assuming that the Mat-Su wetland reserves, water body setbacks, and State Game Refuges remain managed as such (<i>Final EIS</i> Section 4.9.4.1.1).</p> <p>Impacts studied included “indicators” that can be quantified such as increased shoreline activity, increased boat traffic, increased wastewater, and increased runoff, all of which could affect the whales and their prey species.</p> <ul style="list-style-type: none">• Shoreline activity is not anticipated to deter belugas from using nearshore waters because beluga whales often inhabit or move through developed areas such as the Port of Anchorage (POA) and Turnagain Arm alongside the Seward Highway.• Increased boat traffic—Port MacKenzie traffic and more recreational boats--could increase in human presence in the area. Few intentional or unintentional incidents of harassment are reported today and are not expected to increase.• Increased wastewater generation (an approximately 1.7-million-gallon increase in the study area) will likely be partially offset by decreases outside the study area commensurate with the projected shift in population.• Increased impervious surfaces (an approximately 5,276-acre increase; an increase of approximately 2.2 percent of total land coverage in the study area) will reflect the expected shift from large-lot development to subdivisions with smaller lots.• Increased nonpoint pollution generation (an increase of approximately 2.2 pounds per acre per year in the study area) would be limited with proper maintenance and operation of wastewater facilities to protect Cook Inlet water quality, and pollutants in stormwater runoff and wastewater that reach Knik Arm will dissipate and dilute rapidly because of the tidally influenced high circulation rates. Therefore, the effect of this increased pollutant loading will likely be within the range of natural variation and is not expected to affect beluga whales or their habitat. <p>To avoid and mitigate indirect and cumulative impacts from the project, including impacts to fish habitat and anadromous streams, FHWA and KABATA have agreed to help fund a new staff position in the Mat-Su Borough for up to \$100,000 per year for 2 years. This staff member will help develop a consolidated permitting process (“one-stop shopping”) and facilitate appropriate land use, development, and environmental planning efforts in the Borough associated with projected economic and population growth. In addition, FHWA and KABATA will help fund up to \$70,000 to be used by the Mat-Su Borough for other priority work identified by the Borough and other agencies to facilitate orderly land use planning and economic development. No boat launch ramp facility will be constructed on either side of the KAC Project and no direct access to tidelands will be provided.</p>
321	9	Dutton	Defenders of Wildlife	<p>The FEIS finally notes that the cumulative effects of bridge project and past, present and reasonably foreseeable projects and operations will negatively impact the Cook Inlet’s beluga whales. FEIS, at 4-320; see 40 C.F.R. §1508.7. However, the FEIS’s analysis fails to provide the "quantified or detailed information" necessary to ensure that the required "hard look" has been taken. Klamath-Siskiyou Wildlands Center v. Bureau of Land Mng’t, 387 F.3d 989, 993-94 (9th Cir. 2004) “General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." Id. ("The analysis must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects."). The FEIS draws its broad conclusions about the negative cumulative impact to the species, from a general discussion that does not constitute a hard look at the problem.</p> <p>This beluga population is exposed to the largest industrialized coastal area in Alaska. As a result, the current threats to beluga whale habitat include both habitat loss from development, and habitat loss through displacement from conflict with other human-caused activities. NMFS acknowledged seven years ago that "[b]ecause Cook Inlet belugas are geographically isolated, perturbations that are humanly-induced could have a dramatic effect on the population." 63 Fed. Reg. at 64,229. Industrial, commercial and residential developments and associated activities all may result in the degradation of the available habitat for Cook Inlet beluga, whale prey species and of the marine environment upon which Cook Inlet beluga whales depend.³ Industrial activities, such as port usage, oil industry related activities (e.g., drilling, seismic testing),⁴ onshore and offshore municipal and industrial pollution discharges, U.S. Army Corps of Engineer port-related dredging activities in Cook Inlet, and vessel traffic -- particularly in light of the Municipality of Anchorage’s proposed port expansion,⁵ and the recent construction of Port MacKenzie--all result in the diminishment of available habitat for Cook Inlet beluga whales. These impacts, which are adversely affecting both beluga whales and the species the prey upon, should have been examined in the FEIS.</p>	<p>The comment states that the <i>Final Environmental Impact Statement (Final EIS)</i> failed to provide quantified or detailed information demonstrating that a “hard look” has been taken at the potential negative impacts to the beluga whale and its prey species.</p> <p>The detailed information from which the <i>Final EIS</i> was summarized includes published data as well as results from an entire year of field surveys conducted by KABATA in cooperation with the National Marine Fishery Service (NMFS). This detailed information can be found in the <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska July 2004–July 2005</i>, (LGL Alaska Research Associates, Inc., 2005), and the <i>Cumulative Effects Technical Report</i> (KABATA, 2006). The Federal Highway Administration (FHWA) and KABATA have seriously considered (taken a hard look at) the impacts to the Cook Inlet beluga whale.</p> <p>As stated in the response to Comment 321-1, since the <i>Final EIS</i>, and as part of ongoing discussions with the National Marine Fishery Service (NMFS), FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was for the project team to get feedback from NMFS about the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). The cumulative effects section of the BA, submitted to NMFS in July 2010 includes a detailed look at actions (non-federal nexus) such as vessel traffic, commercial and recreational fisheries, and land-based development, as well as noise. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p>
321	10	Dutton	Defenders of Wildlife	<p>As noted above, any federal agency proposing to take an action that is likely to “jeopardize the continued existence” of a species that has been proposed for listing must confer with the wildlife agency charged with the protection of such species, here NMFS. The “jeopardize” a species means to “engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02.</p> <p>This standard is met here. The MMC has noted that “the population has declined since 1998, and, in all likelihood, is continuing to decline even without additional stressors such as construction of a large bridge in the vicinity of one of the key habitats used by the population.” MMC 2006, at 2-3. NMFS, noting that the “proposed work would have significant adverse effects on</p>	<p>The comment primarily concerns the standard for a federal agency to “confer with the wildlife protection agency charged with protection” of a species, the comments of the National Marine Fishery Service (NMFS), and the Federal Highway Administration’s (FHWA) duty under the Endangered Species Act.</p> <p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, FHWA and KABATA have coordinated with NMFS to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales has been underway since before the Cook Inlet DPS became ESA-listed in October 2008. This early agency involvement was a result of</p>

				<p>belugas, and at a magnitude from which the small population might not recover,” similarly concluded that “the preferred alternative could threaten the recovery and conservation of the Cook Inlet beluga whale.” NMFS 2006, at 2 (emphasis added).</p> <p>Furthermore, the Federal Highway Administration (“FHWA”) has, to date, failed to meet its duty pursuant to the Endangered Species Act (“ESA”), 16 U.S.C. 1531 et seq., to confer with the National Marine Fisheries Service (“NMFS”) regarding the impacts of the project on the beluga whale and to assess available means of minimizing such impacts. See 16 U.S.C. §1536(a)(4).</p> <p>NMFS has made FHWA aware of its responsibility to enter into a conference on the impacts of the project on the beluga. See FEIS, App. J, Meeting Record (May 18, 2007). As the project will likely jeopardize the continued existence of the beluga, and “the most conservative strategy is necessary to foster their recovery,” NMFS 2006, at 2, the FHWA must initiate a conference with NMFS. See 16 U.S.C. § 1536(a)(4); 50 C.F.R. § 402.10.</p>	<p>beluga whale protection under the Marine Mammal Protection Act of 1972 (MMPA) and project development through the NEPA, with NMFS serving as a Cooperating Agency for the EIS.</p> <p>FHWA has done its duty under the Endangered Species Act (ESA). FHWA and KABATA met with NMFS on May 18, 2006 (meeting is included in Appendix J of the <i>Final Environmental Impact Statement [Final EIS]</i>) to discuss the proposed listing of the Cook Inlet beluga and to determine whether proceedings under Section 7 of the ESA were warranted. At that time, NMFS stated that they would not be requesting Conference for the <i>Final EIS</i>/Record of Decision (ROD), and suggested that this was due to unclear standards of jeopardy and a lack of recovery criteria, lack of data to base decisions upon, and the fact that NMFS was still processing public comments on the proposed listing.</p> <p>As part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was for the project team to get feedback from NMFS about the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on ESA and MMPA processes run concurrently. With submittal of the BA, FHWA provided NMFS with all the best scientific and commercial data and interpretation available concerning the anticipated impact of the project on the listed species and proposed critical habitat.</p>
322	1	Weiher Ph.D.	NOAA/ NMFS	<p>The FEIS responds to our previous comments through provision of additional analyses and clear statements regarding adverse effects. However, these additional analyses have not removed NOAA’s concerns, and our position on this project in regard to beluga whales, Essential Fish Habitat, and our marine and freshwater trust resources has not changed.</p> <p>We continue to have very serious concerns about the environmental consequences of the project, especially for beluga whales. We provide these comments on the FEIS for consideration as part of the Federal Highway Administration’s decision-making process.</p>	<p>To address the “very serious concerns about the environmental consequences of the project, especially for beluga whales” as expressed the in the comment, discussions with the National Marine Fishery Service (NMFS), the Federal Highway Administration (FHWA) have been ongoing. FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was to address potential impacts of the project on the beluga whale. The project team received feedback from NMFS about the Biological Assessment (BA) and Letter of Authorization (LOA) documents developed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation.</p> <p>Bridge design/construction features will be adapted to address NMFS’s concerns in the Final Design.</p> <p>Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>. The MMPA process is underway. Additional coordination with NMFS will continue throughout the design and permitting phases of the project.</p>
322	2	Weiher Ph.D.	NOAA/ NMFS	<p>NOAA’s concerns and issues were presented in detail in our November 17, 2006 response letter to the Draft Knik Arm Crossing Environmental Impact Statement (DEIS). In response to those comments, the FEIS presents additional analysis of bridge crossing design alternatives, such as alternate transportation modes and floating and suspension bridge designs. The FEIS similarly carries through the 14,000-foot bridge length for comparative purposes, although noting that this alternative does not meet the stated purpose and need. The FEIS concludes that only the 8,200-foot bridge length meets the purpose and need of the proposed action. The environmental consequences of that alternative cause us to continue to support the No Action Alternative as the best option for promoting the recovery of Cook Inlet belugas and sustaining upper Cook Inlet salmon runs.</p>	<p>The Federal Highway Administration (FHWA) and KABATA understand the National Marine Fishery Service’s (NMFS) concern about the KAC Project’s 8,200-foot bridge (Crossing) and its potential effects on the recovery of Cook Inlet beluga whales and salmon runs. Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, FHWA and KABATA have worked with NMFS to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Studies done for the Biological Assessment (BA) reveal that the 8,200-foot bridge alternative will not adversely impact the recovery of the Cook Inlet beluga whale, or the sustaining salmon runs. Additionally, project-specific fisheries studies were conducted that take impacts to beluga prey species into account (such as <i>Knik Arm Crossing Essential Fish Habitat Assessment</i> [KABATA, 2006]). Most of the fish with designated Essential Fish Habitat (EFH) within the study area are also important sport or commercial fishery species within Cook Inlet. One finding of the EFH suggested the proposed bridge approaches would force migrating adult salmon into deeper, faster waters where they might be more susceptible to beluga predation. The EFH report, which also indentifies potential direct, indirect, and cumulative impacts to EFH from the project can be found, in its entirety, in Appendix F of the <i>Final Environmental Impact Statement (Final EIS)</i>.</p> <p>Scientific monitoring during construction will help to determine the impacts associated with beluga prey. FHWA and KABATA will mitigate the KAC project’s adverse impacts on the prey species of the Cook Inlet beluga whale as part of overall compensatory mitigation for wetlands and water bodies through use of the Anchorage Debit/Credit Methodology. Fisheries enhancement mitigation approaches being considered by FHWA and KABATA for anadromous waterways or waters in the Anchorage Bowl and Mat-Su area include habitat and conservation, improvement of fish passage, and stock enhancement.</p> <p>Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales have been underway since before the Cook Inlet distinct population segment (DPS) became listed under the Endangered Species Act (ESA) in October 2008. This early agency involvement was a result of beluga whale protection under the Marine Mammal Protection Act of 1972 (MMPA) and project development through the NEPA, with NMFS serving as a Cooperating Agency for the EIS. Beluga whale habitat was a key constraint that shaped the project study area and the location of alternatives developed for the proposed Crossing. FHWA and KABATA are committed to continuing to work closely with NMFS, including formal Section 7 Consultation under the ESA and the MMPA, to meet authorized requirements and develop and define appropriate mitigation as the project moves forward. As part of ongoing discussions with NMFS, FHWA hosted a coordination</p>

					meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010; and a Workshop September 8 and 9, 2010. The purpose of these meetings was for the project team to get feedback from NMFS about the BA and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. The MMPA process is on-going. With submittal of the BA, FHWA provided NMFS with all the best scientific and commercial data and interpretation available concerning the anticipated impact of the project on the listed species and proposed critical habitat. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i> , and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i> , of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i> .
323	1	Parkin	EPA	<p>In our review of the 2006 draft EIS for the Knik Arm Crossing; we concluded that the proposed project may cause avoidable adverse environmental impacts to wetlands and aquatic resources. Also, other alternatives (such as the No Action or the Expandable Ferry Alternatives) appear to be available to provide improved transportation service between Anchorage and the Mat-Su while minimizing environmental and related economic and social impacts. Therefore we rated the document EO-2, Environmental Objections, Insufficient Information. We made recommendations for substantive additional information and actions pertaining to the range of alternatives, analysis of environmental consequences, and mitigation for impacts.</p> <p>While we are pleased to see that the FEIS includes some promising mitigation components, the basis of our objections remains. The promising mitigation components include funding for a 2-year staff person in the Mat-Su Borough to address development and permitting, and a new Memorandum of Agreement (MoA) among the Knik Arm Bridge and Toll Authority (KABATA), the Alaska Department of Transportation (ADOT&PF) and the Mat-Su Borough regarding extension of the National Highway System (NHS) from the Parks Highway. However, the comments that were the basis of our objections have not been addressed. Consequently, we continue to have environmental objections to the proposed project.</p>	<p>The comment states that the concerns expressed about the <i>Draft Environmental Impact Statement (Draft EIS)</i> remain for the <i>Final Environmental Impact Statement (Final EIS)</i>, and the basis of the <i>Draft EIS</i> comments remain unaddressed—insufficient information about alternatives, impacts analysis, and mitigation of the impacts,</p> <p>A full range of alternatives to address the purpose of and need criteria for the KAC Project were identified and evaluated. These alternatives were screened using nine purpose and need criteria and eight technical criteria to determine reasonable alternatives for detailed evaluation in the EIS. In Level 1 Screening, five different transportation modes were evaluated. In Level 2 Screening, three types of bridges, two types of tunnels, and a tidal dam were evaluated. In Level 3 Screening, eleven corridors and five variants were evaluated. Alternatives that did not meet the screening criteria were eliminated from further consideration (see Section 2.5 of the <i>Final EIS</i> for details). Based on this screening, five reasonable alternatives were carried forward for evaluation in the <i>Final EIS</i>.</p> <p>The No-Action Alternative and four build alternatives were evaluated in detail. The build alternatives did not constitute entirely separate routes or unique designs; instead, they were distinct combinations of components (and their common elements) that offered obvious advantages in terms of overcoming geographic, socioeconomic, physical, environmental, and financial constraints while minimizing common impacts. The <i>Final EIS</i> provided a detailed discussion of each reasonable alternative’s direct, indirect, cumulative, and construction impacts on the natural and human environment. The multimodal, transit, and non-road alternatives mentioned in the comment were evaluated, and although they were complementary to the proposed project, were found to not be reasonable alternatives based on the purpose and need for this project.</p> <p>The Federal Highway Administration (FHWA) and KABATA continue to work with regulatory agencies, including Environmental Protection Agency (EPA). This work will be ongoing throughout the permitting process to address issues deemed by any agency to be unresolved. Specific responses to individual comment issues are detailed below.</p>
323	2	Parkin	EPA	The FEIS did not expand the range of alternatives beyond "No Action" and one bridge alternative with approach options. We believe that other alternatives exist that appear reasonable, feasible, and compatible with the current direction of transportation and growth in the Anchorage Bowl and the Mat-Su Borough. These include the Expanded Ferry Alternative and the Transportation Package Alternative, which includes the same commuter rail system that is currently being explored by the Alaska Railroad Corporation (Anchorage Daily News, 2/6/08).	<p>The prescribed National Environmental Policy Act (NEPA) process for scoping, identifying, screening and evaluating alternatives was followed.</p> <p>See the response to the previous comment.</p>
323	3	Parkin	EPA	<p>As presented, the range of alternatives may not comply with the Clean Water Act Section 404(b)(1) Guidelines. The range of alternatives must include those that are practicable "in light of the overall project purposes" [40 CFR 230.10(a)(2)]. In addition, the definition of "financial feasibility" is subjective, and does not constrain or change the required evaluation of practicable alternatives.</p> <p>The "Only Practicable Alternative Finding" included in Appendix M of the FEIS does not meet the 404(b)(1) requirements for evaluation of practicable alternatives. This Finding does not alter the legal responsibility of the Corps and EPA to evaluate practicable alternatives to proposed discharges of dredged or fill materials and to only authorize the least environmentally damaging practicable alternative (LEDPA).</p> <p>As stated in the Corps’ comments on the Draft EIS, without the development of practicable alternatives or adequate data to indicate the impact of each of the alternatives it may be "impossible to determine which alternative would comply with the Section 404(b)(1) Guidelines" "or determine the type and amount of mitigation that may be required.</p>	<p>The comment asks that additional alternatives be evaluated to meet the Clean Water Act Section 404(b)(1) guidelines and the National Environmental Policy Act (NEPA). The comment further says that “the definition of ‘financial feasibility’ is subjective, and does not constrain or change the required evaluation of practicable alternatives.”</p> <p>The Clean Water Act governs the evaluation of alternatives in Section 404 (b)(1). The alternatives evaluated in the application process for the 404 permit will be developed in consultation with the U.S. Army Corps of Engineers (USACE). As in Section 4(f), these evaluations may differ from those required under NEPA.</p> <p>Consistent with the National Environmental Policy Act (NEPA), a full range of alternatives to address the purpose of and need for the KAC Project were identified and evaluated. See response to Comment 323-1. None of the alternatives were eliminated based solely on financial feasibility.</p> <p>The Federal Highway Administration (FHWA) and KABATA will continue to work with regulatory agencies, including Environmental Protection Agency (EPA), throughout the permitting process to address issues deemed by the agency to be unresolved.</p>
323	4	Parkin	EPA	We believe that additional alternatives should be evaluated to comply with Clean Water Act Section 404(b)(1) guidelines and NEPA, including the Expandable Ferry and the Transportation Package Alternatives, which do not preclude a future bridge, and would likely expand the transportation system in a manner and at a pace that would be less damaging to the environmental, economic, and social fabric of the region. Also include alternatives with longer bridge lengths, whether rail or vehicular, in order to minimize fill in waters of the U.S. and its associated impacts to Knik Arm hydrology, sedimentation, and essential fish habitat. This should include the 14,000 ft bridge, and/or a bridge alternative that is substantially longer than 8,200 ft, in consultation with the Corps of Engineers, NOAA Fisheries, and other resource agencies.	<p>The comment asks that additional alternatives be evaluated to meet the Clean Water Act Section 404(b)(1) guidelines and the National Environmental Policy Act (NEPA). The Clean Water Act governs the evaluation of alternatives in Section 404 (b)(1). As in Section 4(f), these alternatives evaluations may differ from those required under NEPA.</p> <p>See response to Comment 323-1, above, regarding alternatives evaluation conducted under NEPA including the expandable ferry and the transportation package alternatives.</p> <p>The comment asks for additional discussion of a longer bridge length to minimize fill and “associated impacts.”</p> <p>There are a number of possibilities for bridge lengths between 8,200 feet and 14,000 feet. Section 2.5 of the <i>Final EIS</i> and KABATA’s <i>Crossing Options Technical Report</i> (KABATA, 2005) describe how the two bridge lengths considered in</p>

					<p>the <i>Final Environmental Impact Statement (Final EIS)</i> were chosen. FHWA identified the 8,200-foot bridge as the least environmentally damaging alternative to the beluga whale because it would require half the number of piers and shorter in-water construction time than the 14,000-foot alternative. In addition, hydrologic and sedimentation results presented in the <i>Final EIS</i> and technical reports found that no significant impacts to hydrologic dynamics would occur as a result of the Recommended Crossing alternative. The <i>Final EIS</i> also discusses results of micro-scale modeling completed to determine potential effects on fish passage around bridge abutments in Section 4.8.1.3 (p. 4-194) and Section 4.8.2.2 (p. 4-232). The change in hydrodynamics is not likely to change prey accessibility for belugas, and thus their predation on fish in Knik Arm. Long-term habitat shifts and bathymetric alterations may result from substantial areas of silt deposition along the bridge approaches. Stable areas of settled sediment are likely to benefit beluga prey species. As these areas accrete over time, they might smooth the nearshore bathymetry of the migration corridor used by anadromous fishes near the bridge approaches, thus countering or reducing the effects of forcing these fishes into deeper water. These depositional areas might also benefit the local food web by increasing primary productivity through enhanced production of organic matter and invertebrates.</p> <p>FHWA and KABATA will continue to work with regulatory agencies, including Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), NMFS and other resource agencies through the permitting process to address issues deemed by the agencies to be unresolved.</p>
323	5	Parkin	EPA	<p>Water quality, beluga whales. We continue to have concerns about the effects of untreated stormwater from the project. Also, the FEIS has not been updated to acknowledge that the beluga has now been proposed to be listed as endangered under the Endangered Species Act (ESA). We believe that the impacts of the direct, indirect, and cumulative effects of the proposed project on beluga whales could be substantial.</p> <ul style="list-style-type: none">•To prevent pollution, we continue to advise that runoff from the proposed bridge be detained, treated, and/or otherwise managed to prevent pollution to Knik Arm.•In light of the proposed listing of beluga whales, it would be prudent to analyze a range of alternatives and mitigation that would be protective of the species.	<p>The comment expresses concern about “the effects of untreated stormwater from the project—direct, indirect and cumulative and effects on the beluga”.</p> <p>As part of the <i>Draft Environmental Impact Statement (Draft EIS)</i>, a water quality assessment was performed and detailed in the <i>Knik Arm Crossing Preliminary Offshore Water Quality Assessment Technical Memorandum</i> (Kinnetic Laboratories, Inc., October, 2004). This report included a discussion of point and non-point sources of pollutant inputs, existing condition of Knik Arm, and a brief evaluation on impacts that examined general issues of pollution from the bridge. The report concluded that, “Given the large currents and assimilative capacity of Upper Cook Inlet and Knik Arm, impacts on water quality as a result of bridge input would be negligible.” Also see the <i>Land Use and Transportation Forecast Technical Report</i> (KABATA, 2006) Appendix J entitled Indirect Land Use Impacts (PlanBuilder).</p> <p>Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, the Federal Highway Administration (FHWA) and KABATA have worked with the National Marine Fishery Service (NMFS) to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS with regard to beluga whales has been underway since before the Cook Inlet distinct population segment (DPS) became ESA-listed in October 2008. This early agency involvement was a result of beluga whale protection under the Marine Mammal Protection Act of 1972 (MMPA) and project development through NEPA, with NMFS serving as a Cooperating Agency for the EIS. FHWA submitted a BA and LOA to NMFS in July and August 2010. In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga whale...” Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p>
323	6	Parkin	EPA	<p>Hydrology and sedimentation. The FEIS presents additional data regarding suspended sediment, seabed critical shear stress, and marine hydrology. However, new modeled outcomes have not been provided to more accurately disclose the effects of the project on sedimentation, essential fish habitat, fish movement and survival, beluga whales, or the Port of Anchorage. For example, the FEIS describes the "boundary layer wedge (BLW)" as an area within which flow velocities will be lowered such that juvenile fish will be able to navigate their way past fill embankments. However, since this wedge will form down-current and thirty feet away from the face of abutments, there will still be high flows near the embankments that can impede passage of juvenile fish.</p> <p>Because the fill embankments may potentially act as passage barriers, these effects should be disclosed and mitigated.</p>	<p>The comment says that “new modeled outcomes have not been provided to more accurately disclose the effects of the project on sedimentation, essential fish habitat, fish movement and survival, beluga whales, or the Port of Anchorage.”</p> <p>The additional hydrology data was not significantly different from previous sedimentation modeling results therefore the anticipated impacts relative to sedimentation and its effects as reported in the <i>Final Environmental Impact Statement (Final EIS)</i> were unchanged. In September of 2010, KABATA ran the U.S. Army Corps of Engineers’ (USACE) physical model with to-scale sand bags to represent the approach fills. KABATA and USACE will work together to make any adjustments necessary to the “fill” in the model to reach a consensus on effects.</p> <p>The comment expresses concern that “there will still be high flows near the embankments that can impede passage of juvenile fish.”</p> <p>Hydrodynamic modeling predicts an acceleration of the center channel flow through the Crossing during both flood and ebb tides. This will result from a reduction in the cross-section areas of the available flow channel. Hydrologic and sedimentation results presented in the <i>Final EIS</i> and technical reports found that no significant impacts to hydrologic dynamics would occur as a result of the Recommended Crossing alternative. The <i>Final EIS</i> also discusses results of micro-scale modeling completed to determine potential effects on fish passage around bridge abutments in Section 4.8.1.3 (p. 4-194) and Section 4.8.2.2 (p. 4-232):</p> <p><i>Because of the surface roughness created by the large, abutment armor rock (3–5 feet in diameter), a wedge-shaped volume of flow (boundary-layer wedge) would exist in waters directly adjacent to the proposed bridge approaches. Even at maximum tidal flows (i.e., spring ebb and flood) the boundary-layer wedge would extend 43 feet from the abutment to a depth of 22 feet, within which the flow speed would be less than 0.5 foot per second.</i></p> <p>Thus, a typical fry will be able to avoid entrapment and maintain opportunities for rest and refuge through use of the</p>

					<p>numerous crevices along the armor rock face. In addition, the nearshore currents around the abutments are slower than the existing condition.</p> <p>Finally, this comment concerns the potential for the “fill embankments” to “act as passage barriers.” Fish passage is not expected to be affected, and the hydrodynamic effects will not substantially alter long-term prey availability or accessibility for beluga whales. Speeds of 0.5 foot per second are well below tidal and riverine current speeds experienced by migrating fish in waters elsewhere in, and discharging into, the Knik Arm; therefore, no significant impacts to fish migration as a result of bridge abutments would be anticipated.</p> <p>KABATA is committed to working with the resource agencies to further minimize and mitigate potential impacts during the design and permitting phase of the project.</p>
323	7	Parkin	EPA	<p>Air quality, air toxics. The FEIS does not address diesel emissions from construction equipment and truck traffic, stating in the response to comments that one cannot practically determine the emissions of the local fleet of construction equipment that would be used on the project. Composite emission factors from EPA's NONROAD model for construction equipment and MOBILE6.2 for on-road equipment are readily available and have been used for other similar projects.</p> <p>Provide emissions estimates for construction equipment and truck traffic during project construction, disclose the communities and sensitive receptor locations exposed to these emissions, and discuss the human health effects of these pollutants.</p>	<p>The comment states that the <i>Final Environmental Impact Statement (Final EIS)</i> does not address diesel emissions from construction equipment and truck traffic during the construction period.</p> <p>The <i>Final EIS</i> discusses air toxics from diesel emissions in Section 4.5.1.2.6. The duration of the exposure from construction equipment is temporary and short-term. As the fleet of construction equipment in Anchorage is replaced by equipment that is more efficient, the emissions of MSATs from off-road vehicles is expected to be substantially lower than today due to implementation of EPA's vehicle and fuel regulations. Page 4-126 of the <i>Final EIS</i> has a description of the atmospheric and seasonal conditions under which construction would occur, whereby MSATs would not be an issue for this project.</p> <p>Because the construction emissions will be relatively brief compared to the lifetime period for chronic diseases such as cancer, only short-term effects should be a concern with respect to construction. The magnitude and duration of the potential increases from construction activities cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. Further, EPA's vehicle and fuel regulations will bring about significantly lower MSAT levels for the area in the future than today.</p>
323	8	Parkin	EPA	<p>The EIS states that the predominant concern is only for long-term chronic effects of mobile source air toxics (MSAT). EPA believes that short term exposures can cause problems or exacerbate existing ones. The EPA Health Assessment Document for Diesel Engine Exhaust, May 2002, states that "Short-term (i.e., acute) exposures can cause irritation and inflammatory symptoms of a transient nature, these being highly variable across the population. The assessment also indicates that evidence for exacerbation of existing allergies and asthma symptoms is emerging." As described in FHWA's Interim Guidance on Air Toxics Analysis in NEPA Documents, mitigation measures, strategies, and solutions for countering the effects of MSAT emissions are effective and readily available.</p> <p>Commit to mitigation measures for countering the effects of construction-related MSAT emissions.</p>	<p>The comment expresses concern that short term exposures to mobile source air toxics (MSAT) can cause problems or exacerbate existing ones. As discussed in the Environmental Protection Agency (EPA) Health Assessment Document for Diesel Engine Exhaust, May 2002 and the Federal Highway Administration's Interim Guidance on Air Toxics Analysis in the National Environmental Policy Act (NEPA) Documents, MSAT emissions can, in general, potentially affect human health in an acute manner (such as short-term lung irritation) or in a chronic manner (such as lifetime exposure resulting in development of cancer or cardiopulmonary disease). Project construction MSAT emissions from diesel equipment, due to their relatively brief nature, are not expected to have measurable effects on chronic diseases, such as cancer.</p> <p>Current EPA rules require that all on-road and non-road diesel in Alaska transition to ULSD by June 1, 2010. Project construction firm(s) will be required to purchase ULSD fuel for all project-related diesel construction equipment, helping to minimize diesel particulate matter emissions. Reducing sulfur content of the fuel accomplishes a significant reduction in particulate matter emissions from diesel engines.</p>
323	9	Parkin	EPA	<p>As stated in our comments on the DEIS, we believe a cumulative effects analysis for air quality for this project should address the effects from different sources of the same pollutants that would be generated from project construction and operation. Such an analysis is not included in the FEIS. For a project of this magnitude it is important to analyze and disclose mobile source air toxics emissions, particularly in the Government Hill area where 46.8% of the residents belong to a minority population.</p> <p>Provide a cumulative effects analysis for air quality, including air toxics emissions from mobile sources and from different sources of the same pollutants that would be generated from project construction and operation.</p>	<p>The Environmental Protection Agency (EPA) comment 323-9 concerns the issue of emissions of mobile source air toxics (MSAT) and suggests that the "cumulative effects" of construction and operation be analyzed.</p> <p>The Federal Highway Administration (FHWA) analyzed the effects of air toxics and the results are presented in Section 4.5.1.2.6 of the <i>Final Environmental Impact Statement (Final EIS)</i>. FHWA guidance on MSATs recommends a quantitative analysis for highway projects where the traffic volume exceeds 140,000 vehicles per day. The proposed project—in the design year—is expected to handle only 45,870 vehicles per day, which is well below the threshold where FHWA recommends quantitative MSAT impact analysis.</p> <p>Criteria and air toxics pollutant emissions are not expected to present a significant risk to the health of residents or other occupants near the project corridor due to construction, operation, or maintenance of the project. Projects involving much greater operational traffic levels, and similar construction and maintenance-related activity levels, have been built in other portions of Anchorage without any noticeable health impacts on nearby populations. These other highway projects were built at a time when the fleet of construction, maintenance and on-highway vehicles had far higher criteria and air toxics emissions than the current fleets. While one cannot say that the air quality-related health risk impact of the project is zero, it is relatively small based on EPA studies, and is an insignificant portion of the population's total health risk from many other pollution and nonpollution related impacts. A comparison of rural area and urban area air toxics health risks with the health risks from other causes can be found in EPA's National Air Toxics Assessment, February 2006 (http://www.epa.gov/ttn/atw/nata1999finalfact.html).</p> <p>Current EPA rules require that all on-road and nonroad diesel in Alaska transition to ULSD by June 1, 2010. Project construction firm(s) will be required to purchase ULSD fuel for all project-related diesel construction equipment, helping to minimize diesel particulate matter emissions. Reducing sulfur content of the fuel accomplishes a significant reduction in particulate matter emissions from diesel engines.</p>
323	10	Parkin	EPA	<p>Dispersed Development in the Mat-Su Borough. We are pleased that KABATA has committed funding to pay for one staff person for two years at the Mat-Su Borough to address development, and an additional \$70,000 for other priority work in the Mat-Su. However, in order to mitigate impacts from this project the Mat-Su Borough (MSB) has additional requests (itemized in previous communications). In our February 16, 2006 letter we requested there be a multi-party “Mitigation Consultation Forum” established as a possibly mechanism to work collaboratively toward desirable and sustainable outcomes in the Mat-Su.</p>	<p>The comment says that the “ROD should disclose Mat-Su Borough’s mitigation requests and costs, and include adequate strategies to support these needs.” The <i>Final Environmental Impact Statement (Final EIS)</i> discloses the Mat-Su Borough’s mitigation requests and costs.</p> <p>To avoid and mitigate indirect and cumulative impacts from the project, including impacts to fish habitat and anadromous streams, the Federal Highway Administration (FHWA) and KABATA have agreed to help fund a new staff</p>

				<p>The ROD should disclose Mat-Su Borough’s mitigation requests and costs, and include adequate strategies to support these needs. To avoid preventable impacts, development controls that result from inventory, comprehensive planning, and citizen involvement and education should be in place prior to project construction.</p>	<p>position in the Mat-Su Borough for up to \$100,000 per year for 2 years. This staff member will help develop a consolidated permitting process (“one-stop shopping”) and facilitate appropriate land use, development, and environmental planning efforts in the Borough associated with projected economic and population growth. In addition, FHWA and KABATA will help fund up to \$70,000 to be used by the Mat-Su Borough for other priority work identified by the Borough and other agencies to facilitate orderly land use planning and economic development. The goal of providing this funding is to assist with agency and local government mitigation requests, however FHWA and KABATA cannot prescribe mitigation strategies and techniques.</p> <p>In addition, following approval of the <i>Final EIS</i>, FHWA and KABATA have committed to additional mitigation funding as outlined in the Section 106 Programmatic Agreement (PA), which was signed by Mat-Su Borough in June 2009 (see Appendix B of the Record of Decision [ROD]).</p>
323	11	Parkin	EPA	<p>Wildlife impacts, moose strikes. The Knik Arm Crossing (KAC) and its proposed road paving from Point MacKenzie to Burma Road would threaten the most concentrated moose population in the Mat-Su and in Alaska. Moose populations are heavily concentrated (estimated 6500 moose) in the game management unit where the proposed project would occur and where human population growth would be most prevalent in the Mat-Su as a result of the proposed project.</p> <p>We appreciate that KABATA has committed \$50,000 for study of moose in the Point MacKenzie study area. However, it is not likely that this amount will be sufficient to obtain the minimum necessary baseline information for a moose study; a more realistic estimate is approximately \$700,000. After the studies, mitigation must also be designed and implemented.</p> <ul style="list-style-type: none">• In consultation and agreement with Alaska Department of Fish & Game (ADF&G) and other partners, increase funding for needed moose studies.• Communicate and partner with entities affected by the road paving/expansion at Pt. MacKenzie, including ADF&G, Alaska Railroad Corporation, ADOT&PF, FHWA, Alaska DNR Office of Habitat Management and Permitting, and Alaska Division of Forestry.• Fund the necessary mitigation measures developed in response to the moose studies.	<p>The comment expresses concern that road paving in the Mat-Su “would threaten the most concentrated moose population in the Mat-Su and in Alaska” with direct and indirect impacts, that a proposed study of this issue is underfunded, that coordination with entities “affected by the road paving/expansion” be undertaken, and that mitigation measures based on the studies should also be funded.</p> <p>Since publication of the <i>Final Environmental Impact Statement (Final EIS)</i>, KABATA has already paid for the study noted in the comment. Mitigation measures to avoid and minimize moose-vehicle accidents on Point MacKenzie Road in the Mat-Su as a result of the project will be further detailed during the design and permit phase of the project, and design and mitigation will be influenced by the study and cooperation with Alaska Department of Fish and Game (ADF&G), Alaska Railroad Corporation, Alaska Department of Transportation and Public Facilities (ADOT&PF), the Federal Highway Administration (FHWA), Alaska DNR Office of Habitat Management and Permitting, and Alaska Division of Forestry.</p> <p>KABATA has also committed to measures that accommodate the moose population and its needs. Measures may include:</p> <ul style="list-style-type: none">• identification of locations where appropriate warning signs could be erected• identification of areas where more extensive roadside clearing will improve lines-of-sight• the installation of lights to illuminate moose migration corridors <p>The comment further notes “moose populations are heavily concentrated (estimated 6500 moose) in the game management unit where the proposed project would occur and where human population growth would be most prevalent in the Mat-Su as a result of the proposed project.” Growth models done for the KAC Project (using PlanBuilder software) showed that the project will contribute to development of approximately 10,460 acres of now-undeveloped land in the Mat-Su. Most of this land will be developed for residential use. To demonstrate the magnitude of predicted development, about 4 percent of the study area (10,260 acres) now has developed parcels. If the project were not built, about 12 percent of the study area (29,360 acres) is expected to be developed, while with the KAC Project implemented, about 16 percent (39,830 acres) will develop. More than 204,000 acres of the study area (84 percent) will remain undeveloped even with implementation of the KAC Project. With or without the KAC Project, 86,730 acres (35.5 percent) of land in the study area will be protected from development, assuming that the Mat-Su wetland reserves, water body setbacks, and State Game Refuges remain managed as such.</p>
323	12	Parkin	EPA	<p>Financial feasibility. The FEIS does not present a substantive explanation, with supporting information, that shows how the "not-to-exceed \$600 million" cost will be achieved. This is of particular concern, since the proposed project may not meet the stated Purpose and Need with respect to financial feasibility, and the environmental mitigation costs for the proposed project would be substantially higher than what has been committed thus far.</p> <p>-Demonstrate financial feasibility for the proposed project, including construction timelines that span more than 2 years.</p> <p>-Disclose ability and intent to adequately fund the necessary mitigation as identified by resource agencies and the Mat-Su Borough.</p>	<p>The comment states a concern that the proposed project may not meet the stated purpose and need with respect to financial feasibility with the inclusion of necessary mitigation costs.</p> <p>During the formal scoping phase of the Environmental Impact Statement (EIS), rough order of magnitude (ROM) construction cost estimates were prepared as a basis for preliminary corridor and corridor variant evaluations (see <i>Final Environmental Impact Statement [Final EIS]</i> Chapter 2). After reasonable alternatives were identified, additional refinements to cost and impact evaluations were performed, including cost estimates for controlled access right-of-way (ROW), preliminary engineering, construction administration, mitigation, and contingencies. Due to the evolving process of alternatives development, early construction cost estimates prepared as part of the scoping process are not readily comparable to later phase comprehensive cost evaluations. As with any project, the cost along with the project’s financial feasibility will fluctuate over time.</p> <p>The project costs including mitigation were updated during the winter of 2009. In January 2010, KABATA fine tuned costs to account for design modifications to minimize, and mitigate construction noise that could affect beluga whales. The cost estimate was developed by the design team as though they were bidding the project in 2010 and included the bridge and roadway approaches. The focus of the fine tuning was to assure reasonable cost and financial feasibility to meet the purpose and need, to create contractor-style estimates using industry standard HCSS estimating software, and to update unit prices. The latest traffic and revenue forecasts continue to show that the project is financially feasible. The project will proceed only if it is financially feasible including full funding of all mitigation measures required for the project.</p>
324	1	Begich	Municipality of Anchorage	<p>It’s evident that there are still disagreements in the technical analysis, financial assumptions, the overall long-term affect the bridge would have on the land use pattern and economic impact as well as the future policy implications to the Anchorage Bowl and the region.</p> <p>The Federal Highway Administration (FHWA) decision to select the Recommended Alternative to be the North Access - Erickson Alternative with an 8200’ bridge is clear in the FEIS. The basis for the recommendation still leaves many concerns to be addressed. The FEIS recognizes these concerns; however suggest that they will be addressed a later time which is of serious concern to the Municipality. Unless these issues are resolved satisfactorily, especially the mitigation of Government Hill neighborhood</p>	<p>The comment states that “there are still disagreements in the technical analysis, financial assumptions, the overall long-term affect the bridge would have on the land use pattern and economic impact as well as the future policy implications to the Anchorage Bowl and the region.”</p> <p>It is understood that this project will affect the Municipality of Anchorage (MOA) in many ways. Federal Highway Administration (FHWA) and KABATA continue and will continue to work with the MOA to address outstanding issues.</p> <p>The comment further states that “The basis for the recommendation [of the preferred alternative] still leaves many</p>

				<p>improvements and the construction of Gambell/Ingra connection by a date certain, I will continue to oppose this Record of Decision.</p> <p>The response to Municipal comments (160) located in Appendix K, pages 40 through 80, of the FEIS were reviewed by MOA staff. It is apparent the FHWA reviewed our comments and offered some thoughtful responses. In some cases we concur and appreciate the clarification of the issues, in other cases, we must disagree.</p>	<p>concerns to be addressed ...” “especially the mitigation of Government Hill neighborhood improvements ...”</p> <p>Since the publication of the <i>Final Environmental Impact Statement (Final EIS)</i>, substantial additional mitigation measures have been committed to by the FHWA and KABATA regarding impacts to Anchorage and the Government Hill Neighborhood, that address the concerns alluded to in the comment. These additional commitments are specified in the Section 106 Programmatic Agreement (PA), which the State Historic Preservation Office (SHPO) and the MOA have since agreed to by signing the PA (January 14, 2010) (see Appendix B of the Record of Decision [ROD]).</p> <ul style="list-style-type: none">• Stipulations III.E, F, G, H, and I of the PA overlap with existing <i>Final EIS</i> commitments related to the impacts to the streetscape and other Government Hill resources.• Stipulation III.E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with the SHPO) the Advisory Council on Historic Preservation (ACHP), the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns Construction of a Cut-and-Cover Tunnel on Government Hill and the mitigations necessary to minimize community impacts.• The PA developed through the Section 106 process stipulates that the MOA will receive assistance for historic preservation planning under Stipulation IV a, 3.a, which states “FHWA will provide funding to the MOA to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed below in Stipulation IV.A.3.b), Downtown, South Addition, and Fairview (Appendix F, <i>Community Council District Boundaries</i>), and provide for the South Addition historic property baseline inventory. Not later than six (6) months after the date of this PA, FHWA shall negotiate and enter into a MOU with the MOA to fund these Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management “tools” that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., <i>Final EIS Traffic Impacts</i>. In addition to new funding, the MOA will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The MOA shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the ROD.”• Stipulation IX.C says that “FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>.”• Stipulation III.H commits FHWA to “consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.”• Stipulation III.K says “FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.” <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts. The MOA has signed the MOU and funds have been provided.</p> <p>The comment also expresses a concern regarding construction of the Gambell/Ingra connection by a date certain.</p> <p>The timing for the construction of the Ingra-Gambell connection is based on the amount of traffic and the revenue that would be generated by the KAC Project. FHWA and KABATA will continue to work with the MOA and the ADOT/PF on joint planning for such a connection.</p>
324	3	Begich	Municipality of Anchorage	<p>A. The disruption of the Government Hill neighborhood for the Erickson Street cut & cover in Phase I is to construct a 2-lane facility, then at a future date, construct an additional and separate tunnel that has 4-lanes for a total of 6 lanes. The ROW for Phase I is at least 93 feet as illustrated in the FEIS and then an additional 103’ for the additional/separate tunnel. What are the options to address the ROW for both tunnels during Phase I, or combine them during one construction activity to limit the further disruption to the community?</p>	<p>The comment asks, “What are the options to address the ROW for both tunnels during Phase I, or combine them during one construction activity to limit the further disruption to the community?”</p> <p>As stated in the <i>Final Environmental Impact Statement (Final EIS)</i>, based on constructability or project economics, certain elements from Phase 2 (e.g., initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1. Exhibits 2-10 through S-14 of the <i>Final EIS</i> summary show the right-of-way (ROW) to be acquired, the locations and types of structures that will be the subject of relocation decisions, and the entities that will have the option of being acquired (with compensation) or of being temporarily relocated during construction. ROW acquisitions for Phase 2 are not scheduled until future development of the Anchorage Approach, however, advance ROW acquisition and relocation may be made available during Phase 1 for hardship cases, protective purchases, or property owners requesting advanced acquisition, and for advanced Phase 2 construction, as discussed above. In Phase1, the cut-and-over tunnel will be a minimum of two lanes wide. Roadway on- and off-ramps will be constructed north and south of Government Hill.</p> <p>The need for and timing of construction of elements described in Phase 2 is based on the best traffic modeling and economic information available at this time. The KAC Project will be constructed in phases to provide needed capacity as traffic volumes grow. As the comment notes, the project phases include an initial minimum two-lane connection for</p>

					<p>the Anchorage Approach via Erickson Street to Loop Road/A-C Couplet in Phase 1. By the design year 2030, traffic modeling indicates the need to expand the Anchorage Approach to four lanes and to connect to the Ingra-Gambell Couplet by way of a viaduct across the Ship Creek rail yard in Phase 2.</p> <p>There are options for the timing of construction of Phase 2 elements: If traffic demand grows faster than anticipated, elements described for Phase 2 could be constructed earlier. Conversely, if traffic demand grows slower than anticipated, the need for additional capacity could occur later than currently anticipated. Until Final Design, it is premature to fix the timing of options for Phase 1 construction elements.</p> <p>To limit the further disruption of the community, Stipulation III.H in the Programmatic Agreement (PA) (see Appendix B of the Record of Decision [ROD]), commits the Federal Highway Administration (FHWA) to “consult and collaborate with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.” Further, Stipulation III.K says “FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.”</p>
324	4	Begich	Municipality of Anchorage	<p>B. In response to the MOA's concerns for environmental commitments, mitigation and monitoring, the FEIS states the project will support Context Sensitive Solutions and revitalizing the area. It further states that mitigation actually includes the decision to put the facility in a tunnel rather than surface connections and put a lid on the depressed road to address noise and keep traffic below grade, which is being understood as part of this alternate as presented in DEIS. However, in calculating mitigation for the Government Hill neighborhood, the cut-cover design is not considered mitigation and only a commitment by FHWA to advance a project that is at best a compromise for the Government Hill neighborhood. Without a more specific commitment, Anchorage will not support this Record of Decision.</p>	<p>The comment questions whether the tunnel under Government Hill is part of the Preferred Alternative or part of mitigation.</p> <p>Since the publication of the <i>Final Environmental Impact Statement (Final EIS)</i>, the Federal Highway Administration (FHWA) and KABATA have committed to substantial additional mitigation measures for impacts to Anchorage and the Government Hill Neighborhood. These additional commitments are specified in the Section 106 Programmatic Agreement (PA) (see Appendix B of the Record of Decision [ROD]). An MOU with the Municipality of Anchorage (MOA) to carry out the provisions of the PA was signed by the mayor on January 14, 2010.</p> <p>Stipulations III.E, F, G, H, and I of the PA overlap with existing <i>Final EIS</i> commitments related to the impacts to the streetscape and other Government Hill resources (<i>Final EIS</i> Sections 4.2.1.3.3, 4.6.1.1, and 4.6.2.3).</p> <ul style="list-style-type: none">• Stipulation III.E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with the State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns Construction of a Cut-and-Cover Tunnel on Government Hill and the mitigations necessary to minimize community impacts.• The PA developed through the Section 106 process stipulates that the MOA will receive assistance for historic preservation planning under Stipulation IV a, 3.a, which states:“FHWA will provide funding to the MOA to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed below in Stipulation IV.A.3.b), Downtown, South Addition, and Fairview (Appendix F, <i>Community Council District Boundaries</i>), and provide for the South Addition historic property baseline inventory. Not later than six (6) months after the date of this PA, FHWA shall negotiate and enter into a MOU with the MOA, to fund these Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management “tools” that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., <i>Final EIS Traffic Impacts</i>. In addition to new funding, the MOA will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The MOA shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the ROD.”• Stipulation IX.C says that “FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in Downtown Anchorage, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the <i>Final EIS</i>.”• Stipulation III.H commits FHWA to “consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.”• Stipulation III.K says “FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.”
324	5	Begich	Municipality of Anchorage	<p>C. The MOA remains strongly opposed to the timetable for the construction of direct connection of the crossing to the Gambell/Ingra travel system. For the reasons stated in our previous comments, without a concrete commitment to the construction of this route, the community cannot support this project.</p>	<p>KABATA and the Federal Highway Administration (FHWA) are committed to connection to the Ingra/Gambell travel system. Phase 2, the Ingra-Gambell connection will be constructed prior to traffic volumes on A-C Couplet reaching 35,000 ADT. The precise timing is dependent on combined growth of traffic on the Knik Arm Bridge, as well as the local</p>

			e		<p>A-C Couplet traffic.</p> <p>The timetable for construction of the direct connection of the crossing to the Gambell-Ingra travel system described in Phase 2 is based on the best traffic modeling and economic information available at this time. Traffic studies show that the A-C Couplet currently has capacity available for additional traffic until about 2023. When traffic demand increases to the point that additional capacity will be required, Phase 2 will be constructed. If traffic demand grows faster than anticipated elements described for Phase 2 could be constructed earlier. Conversely, if traffic demand grows slower than anticipated, the need for additional capacity could occur later than currently anticipated. Based on constructability or project economics, certain elements from Phase 2 (such as initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1.</p>
324	6	Begich	Municipality of Anchorage	<p>D. The MOA continues to question the cost estimate provided in the FEIS. It's clear in response that FHWA and KABATA have sought the expertise of others in confirming the cost of the projects. It is difficult to believe that the project can maintain its previous construction cost estimate from 2005 as illustrated in the FEIS, when our experience is that the cost of road construction has increase about 20% in the last two years. For example, the FEIS maintains that the reconstruction of 9.5 miles of rural road in the Mat-Su and then construct a new road (Northern Access) across the Point McKenzie District to the Mat-Su Port is estimated at construction cost of \$34.2 M, including the contingency of \$7.2M, plus \$5M for design, engineering and construction administration. At \$46.4M for approximately 11.5 miles of road is about \$4M/mile, which seems very optimistic. Likewise, the estimated cost of the bridge crossing and the cut and cover in Government Hills should be reviewed in light of recent construction cost escalation.</p>	<p>The comment states that it is difficult to believe that the project can maintain its previous construction cost estimate from 2005 as illustrated in the <i>Final Environmental Impact Statement (Final EIS)</i>.</p> <p>Estimates do change over time. The current estimate is different than the one done in 2005. Due to the evolving process of alternatives development, early construction cost estimates are not readily comparable to later phase comprehensive cost evaluations. As with any project, the cost along with the project's financial feasibility will fluctuate over time.</p> <p>FHWA conducted a review of the cost estimate in 2009 (<i>Knik Arm Crossing Cost Estimate Review</i>, FHWA 2009). Total construction costs, including a 15 percent contingency, ranged from \$601 million to \$669 million with a 90 percent confidence level.</p> <p>KABATA continues to refine cost estimates to account for additional information and changing economic conditions. In January 2010, KABATA fine tuned costs to account for design modifications to minimize and mitigate construction noise that could affect beluga whales. The cost estimate was developed by the design team as though they were bidding the project in 2010 and included the bridge and roadway approaches. The focus of the fine tuning was to assure reasonable cost and financial feasibility to meet the purpose and need, to create contractor-style estimates using industry standard HCSS estimating software, and to update unit prices. The latest traffic and revenue forecasts continue to show that the project is financially feasible.</p>
324	7	Begich	Municipality of Anchorage	<p>E. The projections of population and travel changes as reported in the FEIS claim that by the design year of 2030, an estimated 16,300 people from the Anchorage area will move to the Mat-Su and locate within the "travelshed," an area where most likely travelers will use the bridge from Mat-Su to Anchorage. In addition, the redistribution of population from the Mat-Su population growth from the Palmer and Core area to "travelshed" is reported to be a combined total of 59,000 people. As a comparison, the Chugiak/Eagle River population in 2005 was an estimated 34,100 and continues to grow. To consider that in 20 years a population of regional residents using the bridge will be almost twice that of the existing Chugiak/Eagle River and using the existing Glenn Highway still remains a difficult concept to support. These assumptions are particularly troubling in light of recent census and Alaska Department of Labor data indicating slower growth rates for the Mat-Su region.</p>	<p>This comment questions the "projections of population and travel changes as reported in the FEIS."</p> <p>Population projections provided by the Alaska Department of Labor are based on current populations and historical trends. Projections in the EIS followed a methodology that was developed using the Institute of Social and Economic Research (ISER) MAP Econometric Modeling System, which is different from that used by the Alaska Department of Labor. The ISER modeling system combines an economic module, a demographic module, a fiscal module, and a regionalization module.</p> <p>As part of the <i>Final Environmental Impact Statement (Final EIS)</i>, the Federal Highway Administration (FHWA) endeavored to develop a more rigorous project forecast that would be consistent with the local planning and modeling efforts on each side of Knik Arm. The methodology for the project's land use and population forecast was based on the Land Use Impacts of Transportation: A Guidebook. (National Cooperative Highway Research Program, Transportation Research Board, Parsons Brinckerhoff Quade & Douglas, Inc. October 1998.). The methodology used to develop the forecast was fully documented in the <i>Knik Arm Crossing Land Use and Transportation Implementation Plan</i> (KABATA 2005), which was shared with the MOA, Anchorage Metropolitan Area Transportation Solutions (AMATS) DEC, the Environmental Protection Agency (EPA) and others before embarking upon the forecasting. FHWA prepared this forecast with continuous review and input from key agencies through the Economic Working Group (EWG) and Interdisciplinary Team (IDT) meetings.</p> <p>The EIS traffic forecast is derived from the MOA's (and AMATS') approved and calibrated traffic model. On the Mat-Su side the EIS forecast is based on the Mat-Su's updated and calibrated traffic model and planning assumptions. Model runs between the regions were calibrated and the results shared with the EWG, IDT, and the MOA's staff. The forecast model's architecture (files) was shared with the MOA's transportation planning staff. The reason for relying on these locally approved models was to assure the local jurisdictions that the project was to be evaluated using the locally approved assumptions and would be consistent with the assumptions of the other local transportation plans.</p> <p>The comment states "that in 20 years a population of regional residents using the bridge will be almost twice that of the existing Chugiak/Eagle River and using the existing Glenn Highway still remains a difficult concept to support." The comment continues that "recent census and Alaska Department of Labor data indicate slower growth rates for the Mat-Su region."</p> <p>The Mat-Su Borough already has approximately 2.2 times the population of Chugiak-Eagle River.</p> <ul style="list-style-type: none">• The Mat-Su's estimated 2009 population is 84,314 (Labor Department Releases State, Borough and Place 2009 Populations. Alaska Department of Labor, January 26, 2010).• The estimated 2010 population for Chugiak-Eagle River is 38,168 (<i>Chugiak-Eagle River Comprehensive Plan Update</i>. Municipality of Anchorage, 2006).• Both MOA and Mat-Su Borough grew in population in 2008-2009 by 30,305 and 24,992 respectively (Labor Department Releases State, Borough and Place 2009 Populations. Alaska Department of Labor, January 26, 2010).• Historically, the Mat-Su Borough has been the fastest growing area in the state, averaging an annual rate of

					<p>3.8 percent (Labor Department Releases State, Borough and Place 2009 Populations. Alaska Department of Labor, January 26, 2010).</p> <ul style="list-style-type: none"> The Mat-Su Borough was the only area of the state where growth came primarily from net in-migration—between 2000 and 2009, in-migration accounted for 18,571 of new residents, which is over 74 percent of the total population increase of 24,992 residents. While both the MOA and Mat-Su Borough are growing, the Mat-Su Borough is expected to grow at a faster rate (ISER, 2009). The average population growth for the Mat-Su Borough is expected to exceed 3 percent compared to less than 1 percent for the MOA http://www.iser.uaa.alaska.edu/Publications/EconDemProjectionsAnchorage_v4.pdf (ISER, 2009) resulting in a population growth of 62,100 in the MOA compared to 90,500 in the Mat-Su Borough. From 2010 to 2035, the MOA/Mat-Su Borough area is expected to grow faster than the rest of the state (1.4 percent compared to 0.75 percent) (ISER, 2009). <p>Beyond future population growth in the Borough, existing Mat-Su population in the western and southern core areas is already in the travelshed for the project and would simply be shifted from the Glenn Highway growth areas. Additionally, to conservatively calculate maximum potential impact of the crossing for the National Environmental Policy Act (NEPA)/environmental impact statement purposes, this projected use of the crossing was not adjusted for toll friction. Subsequent traffic and toll revenue studies prepared by Wilbur Smith Associates for purposes of supporting project financing found a lower usage of the facility due in large part to toll friction.</p> <p>Despite the differing modeling approaches, all forecasts agree that the region's population will grow.</p>
324	8	Begich	Municipality of Anchorage	F. The argument that the bridge supports a reflected forecast of demand and claims to take into account where people want to live and in what kind of housing they want is a skewed argument. When in fact the bridge is necessary to create, more accurately to redirect, the demand in the location that is necessary to support the bridge, its trips and thus its tolls, thus its financial support.	<p>The comment states that “the bridge is necessary to create, more accurately to redirect, the demand in the location that is necessary to support the bridge, its trips and thus its tolls, thus its financial support.”</p> <p>The demand for housing within the Mat-Su is highest for locations closest to Anchorage because Anchorage remains the employment, transportation, education, and health care center of the region. Accommodating latent demand by allowing people access to housing opportunities near Anchorage will create shifts in the location of growth.</p> <p>The Purpose and Need statement was completed in accordance with the Federal Highway Administration (FHWA) Technical Advisory 6650.8A, and is consistent with the FHWA guidance. The technical advisory identifies "social demands and economic development" as legitimate purpose and need elements and an appropriate basis for a project.</p> <p>The KAC Project's purpose and need was developed, in part, to meet the demand for more residential opportunities close to Anchorage, and it is consistent with FHWA guidelines on what constitutes an appropriate basis for a project's purpose and need statement. Further, the technical advisory identifies "modal relationships" as legitimate purpose and need elements and an appropriate basis for a project. The project integrates ports, airports, and railroad facilities, which are important need elements for a transportation project Sections 1.1 and 1.3 of the <i>Final Environmental Impact Statement Final EIS</i>) explains more specifically the problems and benefits of the project with respect to the guidance elements.</p>
324	9	Begich	Municipality of Anchorage	G. In response to MOA comments about the priority ranking of the project, the FEIS cited the AMATS Policy & Procedures for Grandfather Projects. However, the application of the policy was intended to be for those projects, particularly, Non-NHS projects, which AMATS has responsibility to rank and score to support its allocation of the Non-NHS (Surface Transportation Program) Funding. Since the Knik Arm Crossing was never ranked, and it's not a Non-NHS project, applying the AMATS Policy and Procedure regarding Grandfathering projects is not appropriate for the Knik Arm Crossing.	Comment noted. KABATA continues to work with Anchorage Metro Area Transportation Solutions (AMATS).
324	10	Begich	Municipality of Anchorage	Edit/Clarify the graphic on page S-27, Exhibit S-10 to remove the Degan alignment and the related lands shaded to the north of Government Hill.	Comment noted. The exhibit S-10 provides a general illustration of the alternative described in the <i>Final Environmental Impact Statement (Final EIS)</i> , and mistakenly includes right-of-way (ROW) for the Degan alignment. Exhibit S-10 refers the reader to Exhibits S-11 and S-12, which provide greater detail for that specific area and do not show any activity associated with the Degan alignment. The analysis, however, is not affected.
324	11	Begich	Municipality of Anchorage	Edit page S-29, Exhibit (S-12) to illustrate a cut and cover facility, with green shade as reflected in the graphic key/legend, for Phase I on Erickson. The graphic appears to illustrate a trench type facility, which is not the message in the text as to FHWA's intent for a cut and cover on Erickson for both Phase I and Phase II. Review table on page 2-110 that cut and cover tunnel is technically reasonable, and that a cut, no-cover is not technically reasonable.	<p>The comment notes that the legend for Figure S-12 is incorrect.</p> <p>The referred-to legend is common to the entire series of maps for the Erickson Alternative—Exhibits S-11 through S-14. In this series of figures, Exhibit S-12 is intended to show the right-of-way (ROW). Exhibits S-13 and S-14 show the cut-and-cover tunnel. Phase 1 of the Erickson Street Alternative does include a cut-and-cover tunnel.</p>
324	12	Begich	Municipality of Anchorage	Clarify; page S-55, section 4.7, last bullet, regarding the \$71,000 mitigation through SHPO to MOA for a Historic Plan?	<p>During the development of the <i>Draft Environmental Impact Statement (Draft EIS)</i>, the Federal Highway Administration (FHWA) and KABATA provided \$71,000 through the State Historic Preservation Officer (SHPO) to the both the MOA and Mat-Su Borough for historic preservation planning. FHWA and KABATA also provided training in developing historic preservation plans.</p> <p>The MOA has yet to expend the funds. Additional funding has been extended under the provisions of the Programmatic Agreement (PA) and Memorandum of Understanding (MOU) with the MOA for preservation planning, and other mitigation planning.</p>
324	13	Begich	Municipality of Anchorage	Edit, page 2-119, add pedestrian facilities to the graphic cross-section of the proposed facility, as stated in text and illustrate on page S-26, Exhibit S-9.	A pathway is not proposed for Phase 1 of the bridge construction. The future pathway is shown on the right-hand side of the figure for Phase 2.

			e		As stated on page 2-118 and illustrated by Figure 2.31 on page 2-119, a ten-foot pathway would be constructed as part of Phase 2, which is consistent with Exhibit S-9.
324	14	Begich	Municipalit y of Anchorag e	edit, page 2-122, deleted the word "future" for the path	The path is planned as part of Phase 2 and will be constructed as part of that phase.
324	15	Begich	Municipalit y of Anchorag e	Edit, page 3-46, delete/clarify the last sentence. Clarify that the A/C couplet is recognized as part of the National Highway System (NHS) north of 6th Ave. The reader is lead to believe that the entire length of the A/C couplet is on the NHS, which is not the case.	Comment noted. The A-C Couplet is part of the National Highway System only north of 6 th Avenue.
324	16	Begich	Municipalit y of Anchorag e	Add to FEIS, the reference to AR 2007-46(s), with note that "No construction work will be completed on the Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections and the project design had been submitted for review through the established municipal design process".	KABATA has agreed to Amendment D of the Municipality of Anchorage's Long Range Transportation Plan (LRTP), which added the following language: D. No construction work will begin on Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections and the project design has been submitted for review through the established municipal design review process.
325	1	Ragen	Marine Mammal Commissi on	On 17 November 2006 the Marine Mammal Commission commented on the Knik Arm Crossing Draft Environmental Impact Statement (DEIS) as it pertained to marine mammals that occur in Alaska and that might be affected, directly or indirectly, by the construction and use of the proposed Knik Arm bridge (see attached). The Commission also has reviewed the more recent final environmental impact statement on the proposed bridge and provides the following related recommendations and comments.	Comment noted. Responses to recommendations and comments are provided below.
325	2	Ragen	Marine Mammal Commissi on	The Marine Mammal Commission recommends that: <ul style="list-style-type: none">the Knik Arm Bridge and Toll Authority and Federal Highway Administration refrain from making any irreversible or irretrievable commitment of resources related to bridge construction until the uncertain but potentially significant impact of bridge construction and use can be evaluated and the Administration can make an affirmative finding that such activities, once mitigated, will not have a more than negligible impact on the Cook Inlet beluga whale stock.This current situation seems to exemplify the kind of dilemma that Congress sought to address in 1972 and 1973 when it passed the Marine Mammal Protection Act and the Endangered Species Act. From an ecological and conservation perspective, the benefits of delay in constructing the bridge far outweigh the costs. A number of the potential risks to the Cook Inlet beluga whale stock are amenable to scientific investigation. If given adequate support, such investigation should reduce the uncertainty regarding potential effects and provide the information needed to devise mitigation measures to ensure that human activities in Cook Inlet have no more than a negligible impact on the stock.Loss of this stock would clearly constitute a significant and likely irreversible degradation of the Cook Inlet ecosystem. All other beluga stocks in Alaska waters are geographically separated from this region by the Alaska Peninsula, and recolonization could take centuries or more, if it were to occur at all. At a time when marine mammals in Alaska waters are already vulnerable to multiple adverse effects of human activities, we believe a reasonable measure of caution is needed.	The comment asks that the Federal Highway Administration (FHWA) and KABATA refrain from making any "irreversible or irretrievable commitment of resources related to bridge construction." At this time, no "irreversible or irretrievable commitment of resources related to bridge construction" has been made. The comment also asks for more scientific investigation in regard to "the potential risks to the Cook Inlet beluga whale stock" and that "a reasonable measure of caution is needed." FHWA and KABATA are still working with agencies such as the National Marine Fishery Service (NMFS) to avoid, minimize, and mitigate potential impacts of the Crossing. FHWA and KABATA seriously and cautiously considered the potential impacts to the Cook Inlet beluga whale while preparing the <i>Final Environmental Impact Statement (Final EIS)</i> . Throughout the planning and National Environmental Policy Act (NEPA) stages of the KAC Project, FHWA and KABATA have coordinated with NMFS to develop avoidance, minimization, and mitigation measures to reduce the overall effects of the project on the Cook Inlet beluga whale. Communication between FHWA/KABATA and NMFS regarding the KAC Project has been ongoing since 2004. Related discussions with NMFS about beluga whales has been underway since before the Cook Inlet distinct population species (DPS) became listed under the Endangered Species Act (ESA) in October 2008. This early agency involvement was a result of beluga whale protection under the Marine Mammal Protection Act of 1972 (MMPA) and project development through the NEPA, with NMFS serving as a Cooperating Agency for the EIS. Beluga whale habitat was a key constraint that shaped the project study area and the location of alternatives developed for the proposed Crossing. Potential impacts to beluga whales (found in Section 4.8.8.4.2 and Section 4.9.4.8.8 of the <i>Final EIS</i>) and mitigation actions were based on the best available science and consultations with beluga whale experts. Since approval of the <i>Final EIS</i> , FHWA and KABATA have continued coordination/consultation with NMFS under both the ESA and the MMPA. As part of ongoing discussions with NMFS, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010 and an ESA Conference Workshop September 8 and 9, 2010. The purpose of these meetings was to address potential impacts of the project on the beluga, and what decisions must be made prior to FHWA making a Record of Decision (ROD) on the <i>Final EIS</i> . The project team received feedback from NMFS about the Biological Assessment (BA) and the Letter of Authorization (LOA) documents developed under the ESA and the MMPA. Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible "takes"), critical habitat and habitat values, and possible mitigation. The BA and the LOA documents (July and August 2010) include additional measures that take into account the potential impacts the project will have on the beluga whale, including reasonably foreseeable future actions as required by ESA. The project will not proceed until Section 7 consultations under the ESA and receipt of an LOA under the MMPA are complete. In response to the BA, NMFS issued a Biological Opinion (BO) for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 which states: "NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat. ... Although we conclude the project is not likely to jeopardize the continued existence of this species, we remain concerned about the potential additive effects of development projects within the habitat of these endangered whales. Conservation recommendations are provided with the opinion which are intended to mitigate potential adverse effects, and we continue to encourage FHA to fully consider and exercise its responsibilities under section 7(a)(1) of the Act. Because critical habitat has not been designated for the Cook Inlet beluga whale, this document will be a conference opinion on the Knik Arm Crossing as it concerns proposed critical habitat. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales, NMFS will issue a letter confirming this conference <i>opinion to be the biological opinion for this critical habitat</i> (See Appendix C for the complete NMFS BO).

					<p>In the BO, NMFS concurred with all of the mitigative measures identified in the FHWA BA, but clarified that: “<i>We note that some of the measures proposed by KABATA and FHA are not specific or do not include detailed descriptions. NMFS will coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>”. FHWA and KABATA will implement the mitigation measures listed in the BO, which are:</p> <ul style="list-style-type: none">• using drilled-shaft technology for the large-diameter, permanent bridge piers as opposed to driven piles originally proposed in the KAC EIS, significantly reducing in-water noise exposure• increasing bridge span lengths from the 250-foot spans discussed in the KAC DEIS to 275-foot spans, reducing the number of bridge piers from 33 to 29• scheduling temporary pile-construction activities when beluga whales are not in Knik Arm or the KAC project area in large numbers (specifically, between December 1 and July 31)• implementing a soft-start application for initial pile-driving operations• avoiding simultaneous installation and/or removal for moorage, dock, and template piles in different locations (Exception: Whenever beluga whales are not present in the project area and weather conditions are favorable, KABATA will however, coordinate with NMFS to determine whether pile driving at multiple locations would be acceptable to minimize the project's in-water duration of disturbance.)• monitoring construction-related acoustics to determine appropriate safety zones around pile-driving activities• implementing a multiple-observer monitoring program with mandatory shut-down procedures to avoid injury and minimize potential harassment to beluga whales• implementing a construction contractor specification to maximize vessel-free beluga passage zones during construction• implementing NMFS vessel operation guidelines to minimize construction vessel operation impacts• implementing measures to protect water quality and flows in receiving waters• focusing mitigation for fill impacts required for roadway approach construction to maximize fishery enhancements in Knik Arm• preventing the construction of a boat launch ramp facility in association with the project so that no direct access to tidelands is provided• developing an Adaptive Management Plan in close coordination with NMFS <p>NMFS also proposed four additional discretionary conservation recommendations to further avoid and minimize adverse effects:</p> <ol style="list-style-type: none">1. “KABATA should revise their crossing design to decrease the length of the eastern abutment fill by approximately 800 feet, or to Station 810+00 as depicted in the November 2009 Proof of Concept Geological Section. This action would reduce the loss of critical habitat and present fewer long-term impacts to beluga whales which utilize the near shore areas of Knik Arm along this shoreline.2. KABATA or DOT should develop and implement a noise-reduction protocol for vessels. This plan should consider operational and engineering opportunities to reduce noise and may include such measures as using gaskets to isolate noise sources (e.g. engines, generators, winches), using moorings rather than propellers to maintain position, using non-powered barges and platforms in lieu of powered vessels, vessel speed limitations, access points, and travel corridors.3. KABAT A or DOT should halt impact and vibratory pile driving during the month of May within two (2) hours either side of low tide to reduce the exposure of beluga whales to this noise source during the spring eulachon migration.4. KABATA or DOT should develop a vessel operator beluga whale awareness briefing and operational practices to reduce the effects of construction vessels on these whales. KABATA and/or DOT should consult with NMFS to develop this program and information.” <p>As per NMFS recommendations cited above under mitigation measures to “... <i>coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>”, FHWA and KABATA are committed to continued coordination with NMFS as the design phase of the project is developed and more information becomes available to evaluate these discretionary conservation recommendations in the attempt to further avoid and minimize adverse effects to the beluga whale.</p>
325	3	Ragen	Marine Mammal Commission	<p>The Marine Mammal Commission recommends that in view of the pending proposed rule to list the Cook Inlet beluga whale stock under the Endangered Species Act, the Knik Arm Bridge and Toll Authority initiate, in collaboration with the Federal Highway Administration, a conference with the National Marine Fisheries Service under 50 C.F.R. § 402.10 to evaluate the potential effects of bridge construction and use on this stock.</p> <p>In addition, as we have indicated to the National Marine Fisheries Service and others, the Commission believes that the Cook Inlet stock of beluga whales warrants listing under the Endangered Species Act. Based on its rapid decline, small size, failure to recover, and vulnerability to poorly understood and unmanaged or poorly managed risk factors, this stock has an elevated risk of extinction and is in need of the protection provided under the Endangered Species Act. Although the National Marine Fisheries Service has yet to make its final decision on the proposed listing of the stock, publication of the proposed rule is sufficient to trigger the conference requirement set forth under 50 C.F.R. § 402.10, which is designed to help ensure eventual compliance with section 7 of the Endangered Species Act, should the listing be finalized. Such a conference should be designed to provide a more robust framework</p>	<p>Subsequent to completion of the <i>Final Environmental Impact Statement (Final EIS)</i> the Cook Inlet Distinct Population Species (DPS) became listed under the ESA in October 2008.</p> <p>In July 2010, the FHWA, as the lead federal agency, submitted the KAC BA to request formal consultation with NMFS, as required under Section 7(a)(2) of the ESA (as amended), for the Cook Inlet beluga whale. In addition, the BA was submitted to request formal conference for proposed critical habitat for the Cook Inlet beluga whale. With submittal of the BA, FHWA provided NMFS with all the best scientific and commercial data and interpretation available concerning the anticipated impact of the project on the listed species and proposed critical habitat. In August 2010, FHWA requested a Letter of Authorization (LoA) under the MMPA for possible Level B (nonlethal or harassment) takes during construction; this request was contained in Appendix G of the BA and will be updated as the MMPA process progresses.</p> <p>In response to the BA, NMFS issued a “not likely to jeopardize the continued existence of the Cook Inlet beluga</p>

				for evaluating potential effects of bridge construction and use, will help identify key areas of research to characterize risks, and will help identify measures to avoid or minimize those risks.	whale..." Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i> , and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i> , of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i> .
325	4	Ragen	Marine Mammal Commission	Construction and use of the bridge may have a number of adverse effects on the Cook Inlet beluga whale stock. These include disturbance from the noise associated with pile driving and other construction activities. This noise might also mask natural sounds used by beluga whales for communication, navigation, and predator detection. The disturbance from noise may lead to alteration of habitat-use patterns, particularly in the transit corridors into and out of Knik Arm; changes in the distribution and abundance of prey resulting from changes in bottom topography and currents in the inlet; increased risk of stranding; disturbance and risks of collisions associated with increased vessel activity; and disturbance from increased use of the Knik Arm resulting from greater access to the northwestern shore of the Knik Arm area.	<p>The comment says, "Construction and use of the bridge may have a number of adverse effects on the Cook Inlet beluga whale stock. These include disturbance from the noise associated with pile driving and other construction activities."</p> <p>Subsequent to completion of the <i>Final Environmental Impact Statement (Final EIS)</i> the Cook Inlet Distinct Population Species (DPS) became listed under the Endangered Species Act (ESA) in October 2008.</p> <p>Bridge construction will result in short-term increases in underwater noise associated primarily with temporary pile placement and removal. KABATA and the Federal Highway Administration (FHWA) are working closely with the National Marine Fishery Service (NMFS) to minimize and mitigate potential impacts to the Cook Inlet beluga whales. The amount and types of noise anticipated during construction of the Crossing have been studied and documented in the <i>Final EIS</i>.</p> <p>Following approval of the <i>Final EIS</i>, the FHWA and KABATA worked closely with NMFS to further reduce noise and construction impacts. Mitigation techniques to reduce potential impacts included reducing the number of permanent piers, from 33 to 29, commitments to no temporary pile driving and removal during the peak beluga density months of August through November, application of drilled-shaft technology for the permanent piers instead of pile driving, and an intensive visual and acoustic monitoring plan during construction. These commitments are documented in the Biological Assessment (BA) and new Letter of Authorization request submitted to NMFS in July and August 2010 respectively. In response to the BA, NMFS issued a "not likely to jeopardize the continued existence of the Cook Inlet beluga whale..." Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p>
325	5	Ragen	Marine Mammal Commission	Absent such investigation, any conclusion that construction and operation of the proposed Knik Arm bridge will have a negligible impact on Cook Inlet beluga whales would necessarily be based on speculation, as is evident from the lack of definitive data in both the DEIS and the FEIS. We believe such a conclusion is inconsistent with the requirements of the Marine Mammal Protection Act and would create a substantial risk of extending the pattern of misjudgments about (a) stock status, (b) threat factors, (c) adequacy of research, and (d) adequacy of management measures to ensure recovery.	<p>The comment states, "any conclusion that construction and operation of the proposed Knik Arm bridge will have a negligible impact on Cook Inlet beluga whales would necessarily be based on speculation, as is evident from the lack of definitive data in both the DEIS and the FEIS."</p> <p>Subsequent to completion of the <i>Final Environmental Impact Statement (Final EIS)</i> the Cook Inlet Distinct Population Species (DPS) became listed under the Endangered Species Act (ESA) in October 2008.</p> <p>Following approval of the <i>Final EIS</i>, FHWA and KABATA submitted a new Letter of Authorization (LOA) request under the Marine Mammal Protection Act (MMPA) that substantially reduced potential impacts to the beluga whale. Mitigation techniques to reduce potential impacts included reducing the number of permanent piers, from 33 to 29, commitments to no temporary pile driving and removal during the peak beluga density months of August through November, application of drilled-shaft technology for the permanent piers instead of pile driving, and an intensive visual and acoustic monitoring plan during construction. These commitments are documented in the Biological Assessment (BA) and new LOA request submitted to NMFS in July and August 2010 respectively. The project will not go forward without full compliance with these two acts—MMPA and ESA. In response to the BA, NMFS issued a "not likely to jeopardize the continued existence of the Cook Inlet beluga whale..." Biological Opinion on November 30, 2010. For more information regarding impacts on and mitigation for Cook Inlet beluga whales, see Sections VI. X, <i>Mitigation Measures for Impacts on Marine Mammal (Cook Inlet Beluga Whale)</i>, and Z, <i>Mitigation Measures for Impacts on Threatened or Endangered Species</i>, of this ROD, as well as the NMFS BO located in Appendix C, <i>Formal Section 7 Consultation and Conference Information; National Marine Fisheries Service Biological Opinion for the Cook Inlet Beluga Whale</i>.</p>
326	1	French	Government Hill Community Council	Government Hill is proud of the fact that we are Anchorage's first and oldest neighborhood, and residents choose to live there because of the people, the historic nature, the relative isolation and the depth of community involvement and community cohesion, all factors that perhaps can be summed up by "Quality of Life". The number of residents who have lived out most of their lives in our small community is remarkable. It is irrefutable that the proposed Knik Arm Crossing will forever and completely destroy that "Quality of Life". It is important to acknowledge that there is no possible mitigation that will change that fact.	<p>As the comment points out, the construction and operation of the Anchorage Approach will permanently change some areas of Government Hill.</p> <p>Following the <i>Final Environmental Impact Statement (Final EIS)</i>, Federal Highway Administration (FHWA) developed a Programmatic Agreement (PA) under Section 106 of the National Historic Preservation Act to further advance mitigation measures for impacts to the Government Hill community. FHWA views the historic properties of Government Hill as part of the broader Government Hill community setting and commits to mitigation and project design solutions developed in a manner that promote the significant historic characteristics and continued viability of the neighborhood while meeting project goals.</p> <p>The PA includes a mitigation section under Stipulation III, <i>Mitigation Measures</i>, which focuses on the resources affected in Government Hill including the Government Hill Urban Renewal Historic District. The cut-and-cover tunnel, architectural documentation, preservation planning, and Context Sensitive Mitigation are all part of the mitigation measures in Government Hill being implemented to avoid, minimize, and mitigate the direct and indirect impacts to the streetscape and the Government Hill Urban Renewal Historic District.</p>

326	2	French	Governme nt Hill Communit y Council	<p>The Government Hill Community Council (GHCC) respectfully requests that you, the signers, NOT SIGN the Draft Memorandum of Agreement dated November 28, 2007 (DMOA), or any other Memorandum of Agreement proposed by the Knik Arm Bridge and Toll Authority (KABATA) without our knowledge and concurrence.</p>	<p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final Environmental Impact Statement (Final EIS)</i> upon which this comment was based. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project.</p> <p>The PA includes an offer for the GHCC to sign as a Concurring Party to the PA. The PA recognizes that the GHCC will elect a four person board to coordinate with the FHWA and KABATA (Stipulation III.H). In addition, the PA stipulates that FHWA will provide a KABATA Liaison to work with all Consulting Parties (Stipulation III.A).</p> <p>The PA was executed by the signatories in December 2008. Government Hill Community Council was invited, but declined to sign the PA.</p>
326	3	French	Governme nt Hill Communit y Council	<p>The GHCC, the community most directly affected by the Knik Arm Crossing (KAC), was formally identified as a Consulting Party by Edrie Vinson's (former Environmental Program Manager of the FHWA) letter of September 26, 2006 (see attached), but was summarily excluded from Section 106 consultation since early 2006 by KABATA and the Federal Highway Administration (FHWA) without any notification that they arbitrarily "terminated" the GHCC as a consulting party (refer to page 2 of the June 11, 2007 letter from FHWA to SHOP in Appendix J). The GHCC, as a consulting party, should be a full signatory to any MOA. We have not been asked to participate in any of the Section 106 consultations that took place between October 2006 and the issuance of the FEIS that are documented in Appendix J. We consider this unilateral transfer of our rights under 36 CFR 800 without our knowledge or consent, to be a violation of 36 CFR 800, Section 106 of the National Historic Preservation Act under 16 U.S.C. 470s, and a miscarriage of the National Environmental Policy Act (NEPA) process. GHCC's right to participate in the Section 106 process is supported by the April 19, 2007 letter from SHPO to FHWA, the March 24, 2007 letter from the MOA to FHWA, and by many other comments from a variety of agencies and the public.</p> <p>There will not be a valid or legally justifiable MoA without the active, full and substantive participation of GHCC in developing that MoA.</p> <p>36 CFR 800.8(c) allows the use of the NEPA process for Section 106 purposes under strict requirements (reference http://www.npi.org/NEPA/rev106.html). GHCC does not believe that FHWA and KABATA have met those requirements. Specifically, GHCC was not informed in a timely manner that it was a "Consulting Party" under Section 800.3(f), and apparently has been unilaterally terminated as a "Consulting Party" by FHWA and KABATA. We believe that the 8th Whereas in the DMOA is false, as the GHCC has not been allowed to fulfill a substantive role during the EIS process and has not been consulted in accordance with Section 106. See the GHCC November 17, 2006 comments on the DEIS. Refer also to the transcripts in Appendix L, of the various meetings with GHCC to get an idea of the tone of how GHCC was treated by KABATA.</p> <p>KABATA admitted in their response to Comment 14-4 that the June 26, 2006 letter to SHPO stating that "The Government Hill Community Council declined to participate in the initial consultation" was incorrect. FHWA's statement in Comment 14-4 that "FHWA continues to welcome your continued participation" has not been borne out by KABATA's or FHWA's actions. As stated above, we have had no contact from FHWA since December 2006, with little contact between December 2005 and December 2006. Refer to Comment 112-9. With FHWA's admission that their June 26, 2006 letter was incorrect, we also ask that FHWA review their statement in the April 30, 2007 "Section 106 Consulting Parties Position Summaries" on page 1, that on "March 17, 2005, Section 106 consultation was formally initiated with letters to ... Government Hill Community Council..." GHCC cannot find a copy of that letter, and it was not enclosed as stated in this "chronology".</p> <p>GHCC would like to object to the statement on page 1 of the June 11, 2007 letter from FHWA to SHPO that "1. Consulting parties have been and continue to be involved in discussions of development of mitigative measures." The GHCC, an important consulting party has not been invited to participate in any Section 106 issues since early 2006. The GHCC letter of November 5, 2006 (page 273 of Appendix J) to FHWA indicates that we were awaiting being invited to CSS sessions, and the FHWA December 19, 2006 response indicates that GHCC was not being invited to the Section 106 consultations that are documented in Appendix J.</p>	<p>The comment states that Federal Highway Administration (FHWA) has not given Government Hill Community Council (GHCC) adequate opportunities to participate in the Section 106 activities, were given no notice in the change of consulting party status, and given that oversight, a Memorandum of Agreement (MoA) that is not signed by GHCC is invalid.</p> <p>The Initiation of Consultation pursuant to Section 106 of the National Historic Preservation Act letter, which invited GHCC to assist FHWA in identifying historic properties that may be affected by the KAC Project was sent on March 17, 2005. The GHCC did not respond to this invitation.</p> <p>The comment states that GHCC “was summarily excluded from Section 106 consultation since early 2006 ...”</p> <p>A letter from FHWA to State Historic Preservation Office on June 23, 2006, however says, “By way of this letter I am advising you and the certified local government for the Municipality of Anchorage that we will now begin consultation pursuant to 36 C.F.R. 800.6 to resolve adverse effects. I will also notify the Advisory Council on Historic Preservation and request whether they wish to participate. The Government Hill Community Council declined to participate in the initial consultation, but due to the finding of adverse effect, I will again invite them to participate in the consultation to resolve adverse effects.” Meetings with GHCC included:</p> <ul style="list-style-type: none">• Project update on September 21, 2006• Consulting party meeting on adverse effects to Government Hill historic properties, October 10, 2006• Project update, October 19, 2006• Consulting party meetings on:<ul style="list-style-type: none">○ May 1, 15, 16, and 21, 2008○ June 18 and 24, 2008○ July 18, 2008○ September 25 and 29, 2008 <p>FHWA received comments on the <i>Draft EIS</i> from GHCC on November 17, 2006.</p> <p>Since the <i>Final Environmental Impact Statement (Final EIS)</i> a Programmatic Agreement (PA) was developed in lieu of the former MoA that includes the following provisions:</p> <ul style="list-style-type: none">• Substantial changes in mitigation commitments and extensive consultations under Section 106 have occurred with full participation by the GHCC (see Appendix B of the Record of Decision [ROD]).• The PA includes the GHCC as a Concurring Party to the PA.• The PA recognizes that the GHCC will elect a four person board to coordinate with the FHWA and KABATA (Stipulation III.H).• The PA stipulates that FHWA will provide a KABATA Liaison to work with all Consulting Parties (Stipulation III.A). <p>The PA was developed in consultation with the Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project. The PA was executed by the signatories in December 2008. Government Hill Community Council was invited but declined to sign the PA.</p>
326	4	French	Governme nt Hill Communit y Council	<p>There has been no true consultation related to Section 106, the DMOA merely defers the Section 106 consultation to the design phases. There have been some preliminary activities, but no substantive consultations or negotiations with all parties have occurred. One of FHWA's several repeated responses to comments that complain about the effects on historic, cultural and recreational resources is that "Under the Section 106 process, a Memorandum of Agreement (MoA) is being developed to address mitigation for</p>	<p>The Federal Highway Administration (FHWA) conducted the Section 106 consultation process from 2005 through 2008 with the exchange of correspondence, meetings, workshops, and documentation reviews, and informed the public and the consulting parties of the historic preservation issues related to this project through the National Environmental Policy Act (NEPA) process and review of the <i>Draft Environmental Impact Statement (Draft EIS)</i> and <i>Final Environmental</i></p>

				adverse effects."	<p><i>Impact Statement (Final EIS).</i> FHWA, in consultation with the State Historic Preservation Officer (SHPO), conducted the identification and evaluation of historic properties that will be affected by the implementation of the KAC Project.</p> <p>Pursuant to Section 106 of the NHPA and its implementing regulations, Elmendorf Air Force Base (Elmendorf), Matanuska-Susitna Borough (Mat-Su Borough), the Municipality of Anchorage (MOA), Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), Alaska Association for Historic Preservation (AAHP), and the Government Hill Community Council (GHCC) were invited to participate. Further, FHWA consulted with the Knik Tribal Council, Knikatnu, Inc. Eklutna, Inc., and the Native Village of Eklutna. This process included consultation with the Advisory Council on Historic Preservation (ACHP) following the ACHP's decision to participate in the development of the PA under 36 C.F.R. Section 800.14(b) for a long-term project that requires ongoing consultation.</p> <p>Since the <i>Final EIS</i>, substantial changes in mitigation commitments and extensive consultations under Section 106 have occurred with full participation by the GHCC and other concurring parties. As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final EIS</i> upon which this comment was based (see Appendix B of the Record of Decision [ROD]). The PA was developed in consultation with ACHP, SHPO, Elmendorf), GHCC, FHWA, MOA, Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., AHPC, AHPI, and AAHP to address mitigation of adverse effects to historic properties from the KAC Project. The PA was executed by the signatories in December 2008. GHCC was invited but declined to sign.</p> <p>In Stipulation V, <i>Development of Standard Mitigation Agreements (SMAs)</i>, the PA states that based upon the information developed in accordance with the MOUs with the MOA, Mat-Su Borough, SHPO, and the Tribes, the FHWA, in consultation with the SHPO, and other consulting parties, as appropriate, shall determine the need to develop and implement additional mitigation measures for both Phase 1 and Phase 2 of the KAC Project.</p> <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts.</p>
326	5	French	Governme nt Hill Communit y Council	The GHCC also supports the stipulation in the March 24, 2007 letter when it states "these mitigation issues must be fully resolved before construction may proceed."	<p>Since the <i>Final Environmental Impact Statement (Final EIS)</i> substantial changes in mitigation commitments and extensive consultations under Section 106 have occurred with full participation by the Government Hill Community Council (GHCC) and other concurring parties. As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final EIS</i> upon which this comment was based (see Appendix B of the Record of Decision [ROD]). The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project. The PA was executed by the signatories in December 2008. GHCC was invited but declined to sign.</p> <p>In Stipulation V, <i>Development of Standard Mitigation Agreements (SMAs)</i>, the PA states that based upon the information developed in accordance with the MOUs with the MOA, Mat-Su Borough, SHPO, and the Tribes, the FHWA, in consultation with the SHPO, and other consulting parties, as appropriate, shall determine the need to develop and implement additional mitigation measures for both Phase 1 and Phase 2 of the KAC Project.</p> <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts.</p>
326	6	French	Governme nt Hill Communit y Council	<p>KABATA's Section 4(f) Evaluation admits that the coordination and consultation required by Section 106 for mitigation is incomplete. For example, between the draft and final versions of the Section 4(f) Evaluation KABATA deleted its commitment to determine mitigation before publication of the FEIS, and now suggests that consultation and coordination would "continue through the final design process." (p. 70). The actual effects to historic properties on Government Hill are not yet known, and will not be known until the design for Phase 1 and Phase 2 of the KAC project are complete, (refer to KABATA's response to Comment 298-19: KABATA states "The extent of adverse impacts to the Government Hill Urban Renewal Historic District will not be known in detail until specific design elements are identified.")</p> <p>The GHCC believes that additional contributing historic elements of the GHURHD as well as the Square & Round Dance Center (S&RDC), Historic element # ANC-1932 as well as the Curling Club, (an important City-wide recreational element) will be required to be destroyed, based on our knowledge of the actual topography, and the facts of large-scale highway construction.</p> <p>Refer to the attached documents and photographs regarding what we believe those future "specific design elements" to be. It is our estimate that Phase 1 will cause the demolition or right-of-way acquisition of the properties at 820 E. Loop, 432 Manor, and 433 E Harvard. For Phase 2, we estimate that the properties at 742 Ash St., 621 Vine St. and 675 Birch St which are contributing elements to the Government Hill Urban Renewal Historic District, as well as 711 Ash St., which was not recognized as a contributing element, will be demolished or acquired for right of way.</p> <p>The demolition of the these historic elements by Phase 1 and Phase 2 are not mentioned in the Section 106 narrative, and will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations.</p> <p>Attached document: It is important to note that the right of way and project foot-prints shown for the Degan Variant (that was rejected), and the Erickson</p>	<p>The comment expresses concern that several historic buildings have not been included in the list of buildings that would be demolished during construction of the KAC Project, and that the effects to historic properties in Government Hill have been understated because they are not yet known. The comment suggests that this issue will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations.</p> <p>The <i>Final Environmental Impact Statement (Final EIS)</i> considered construction impacts in the community, and the project footprint as described in the document is an accurate depiction of the impacted area. Following the <i>Final EIS</i>, the Federal Highway Administration (FHWA) developed a Programmatic Agreement (PA) under Section 106 of the National Historic Preservation Act to further advance mitigation measures for impacts to the Government Hill community.</p> <p>In the event of unforeseen impacts during construction, the PA includes mitigation for future, unforeseen adverse effects to historic properties under Stipulation V.B, <i>Mitigation Measures for Future, Unforeseen Adverse Effects</i>. Stipulation V and Appendix B include a notification process that may be used if impacts occur differently than outlined in the <i>Final EIS</i>. The PA also includes stipulations for periodic reviews and re-evaluation of impacts prior to Phase 2 (Stipulation IX).</p> <p>Government Hill, as in many urban highway design and construction projects, presents a difficult environment. As mentioned in the comment there are concentrations of utilities, hazardous materials, geotechnical issues, historical properties, parks, and neighborhoods. As the comment further points out, balancing all these issues a challenge. As is common practice when developing an environmental document, the design presented in the <i>Final EIS</i> was based on a 30 to 35 percent design for the analysis of alternatives. Although this level is not highly detailed, it allows enough detail to study the potential impacts of each alternative. To gain more detail about Government Hill in support of the decision process, additional studies were done for hazardous materials, geotechnical issues, and constructability. The Final Design process will address the design and construction details of utility relocations, access, tunnels, and retaining</p>

			<p>Variant are different. This is shown clearly on Figures 4.23 and 4.24 in the FEIS. It may also be useful to review Figures 2.34 and 2.36 showing the typical cross section of Loop Road, and of the Erickson Tunnel. You are encouraged to review those figures ... along with these comments.</p> <p>It is our estimate, and that of civil engineers working on similar designs and of actual construction of similar projects, that both Phase 1 and Phase 2 will not be able to be built as shown on the preliminary design drawings. We feel that the Phase 1 work will impact both the Curling Club, and the Alaska Railroad Employee Recreation Center (Square & Round Dan Center, or S&RDC which is Historic element #ANC-1932). We feel that the Phase 2 work will cause the demolition of an additional 3 houses which are contributing elements to the Government Hill Urban Renewal Historic District. ... (Aerial photo) ...</p> <p>For Phase 1, we believe that the revised layout along Loop Road shown on the preliminary design drawings cannot economically be constructed with directly impacting both the Curling Club, and the S&RDC. That is because of the degree of cut necessary ton the north side of Loop Road, and the amount of fill and retaining wall necessary at the Alaska Railroad yard necessary to avoid impacting AKRR operations. Refer to Figure 2.34 from the FEIS, which states that it is for the Degan Variant, but will be wider for the Erickson Variant due to the separation of the on and off ramps and the sidewalk.</p> <p>The FEIS in Map 8-P1 on page S-29 shows the preliminary design as the approach road comes out of the Erickson Tunnel and transitions to Loop Road. The following is an enlargement of Map 8-P1, and also points out some of the key limiting factors shown in the photos. The light tan color areas are listed in the Legend and Cut/Fill areas ... map ... Page 2-126 states that the Erickson Variant would have a 50 MPH design speed. That is not true for Phase 1, Loop Drive has a posted speed limit of 35 MPH. The existing loop Road has a 4 lane road, and in the vicinity of "Curling Club Curve," is actually reverse graded. i.e. the road slants to the outside of the curve. This causes numerous accidents doth during the winter and summer months. As shown above, Phase 1 for the Curling Club Curve actually includes more of a curve than the existing Loop Road, but maintains about the same radius. The elements shown here include 2 traffic lanes, 1 on, and off ramps, and a new sidewalk. Based on Figure 2.36 of the FEIS, it is assumed that the new "Curling Club Curve" will be correctly graded so that the inside of the curve is lower land the outside.</p> <p>Loop Drive in this area makes the transition from a lower elevation to the "top" of Government Hill. The AKRR Engine shop at the lower right hand side in the enlargement above is about 100 feet lower than Harvard Avenue, and the Square & Round Dance Center is about midway between them. ... Photograph The corner of the Curling right now is less than 10 feet from the edge of the existing sidewalk... photograph ... photograph The Square & Round Dance Center is about 30 feet from the existing sidewalk. ... photograph ... photograph ... photograph ... These above photos show that in order to create the cute and fill sections necessary for a properly graded curve, there will need to be large retaining walls both above Loop Road in Harvard Park, and below, in the Alaska Railroad operations area. Due to the essential nature of the AKRR operations and KABATA's stated intent to not disturb those operations or of the cost of demolishing and relocating the AKRR Engine Shop, GHCC believes that KABATA will choose to instead demolish the S&RDC, and the curling Club in order to fit the various design elements into the space available.</p> <p>The demolition of the Historic S&RDC building by Phase 1 is not mentioned in the Section 106 narrative, and will need to be resolved, mitigated and fully addressed by the Section 106 negotiation and consultations. The rebuilding of a similar structure in another to replace the recreation facilities which exist nowhere else in Anchorage, that will be lost due to this demolition will need to be resolved, mitigated and fully addressed by the Section 4(f) negotiations and consultations.</p> <p>The demolition of the Curling Club, an important recreation facility that exists nowhere else in Anchorage and is used by athletes from around the state, will require rebuilding of a similar structure in another location to replace the lost recreation facilities as noted by the Municipality of Anchorage in their March 24, 2007 letter to FHWA, which states: "Replacement strategies must include facilities as well as land area-and serve existing user populations". GHCC supports the other Municipality of Anchorage requirements for 4(f) mitigation in that letter, including that the "cost of these municipal processes (in addition to acquisition, and construction and other mitigation costs) must be funded as park of the Knik Arm Crossing Project."</p> <p>For both Phase 1 and Phase 2, GHCC believes that cost factors associated with the Tunnel construction will cause KABATA to demolish or acquire for right of way, additional contributing historic elements.</p> <p>The FEIS in Map 8-P2 on page S-31 shows the preliminary design as the approach road comes out of the Phase 2 Erickson Tunnel and raises up to cross Sunset Park. The following is an enlargement. ... Map ...</p> <p>The tunnel under Government Hill is estimated to be at least 25 feet and possibly 30 feet below grade, due to the necessity of maintaining utilities from the east side to the west side of Government Hill, and still having adequate clearance. Figure 2.36 indicates a 10 foot setback from the edge of the concrete walls of the tunnel to the edge of a sheet pile wall, and another 10 feet to the edge of the right of way. Working within driven sheet pile walls only 10 feet from the right of way will cause much higher (from 1.5 to 2 times as high) costs than conventional construction without sheet piles. The number of type of utilities that cross through the area of the Erickson Tunnel including a 24" reinforced concrete sewer main, multiple water lines, natural gas lines, overhead power lines, abandoned utilities (this is Anchorage's first neighborhood) and fiber optic cables that enable phone and internet connections for about half of Alaska, the concept of working inside sheet pile walls quickly becomes cost prohibitive. Those costs are driven higher because of the contaminated soils due to leaks from the former Defense Fuels site, leaks from the Defense Fuels pipeline, and asbestos, lead paint and fuel oil contamination at Sunset Park, and the former location of the Government Hill elementary School that was destroyed by the 1964 earthquake. Some of those haz-mat costs were not identified in the FEIS.</p> <p>Due to KABATA's self-imposed requirement to keep the costs under \$600 million for Phase 1, we believe that KABATA will be forced to cut costs wherever they can, and that will cause them to use conventional excavation for this tunnel. Utilizing conventional construction, the set-backs for a 30 foot deep tunnel in unconsolidated sand and gravel would be about 60 feet from the bottom toe of the slope. This is why the set-backs for the right of way and of the project footprint were shown as being larger for the Degan Variant than the Erickson Variant. It is one way how DABATA had their thumb on the scale when measuring the differences between their two, nearly identical variants.</p>	<p>walls, and most importantly techniques to minimize impacts.</p> <p>FHWA agrees that the Degan and Erickson alternatives are both reasonable. The differences in the alternatives are described in the <i>Final EIS</i>. FHWA will ensure that commitments identified in the <i>Final EIS</i>, such as the cut-and-cover tunnel, will be carried out.</p>
--	--	--	---	---

326	7	French	Governme nt Hill Communit y Council	<p>We believe that the Quonset Hut at 820 E. Loop Road, should have also been considered as a contributing historic element. We believe that Sunset Park should also be recognized as historic. If the 1964 earthquake had happened during a school day, Sunset Park would today be a shrine, an important memorial to the dozens or hundreds of children and their teachers killed there when the school cracked in half.</p>	<p>The Federal Highway Administration (FHWA) assessed the property at 820 E. Loop Road for the purposes of the environmental impact statement analysis and the Section 106 process, and determined it to not be contributing to the historic district. The State Historic Preservation Officer (SHPO) concurred in this determination.</p> <p>Although Sunset Park holds significance to the community, and although “sites” such as historic landscapes can be eligible as long as they meet National Register criteria, Sunset Park was determined to not be eligible; the SHPO agreed with this eligibility determination.</p>
326	8	French	Governme nt Hill Communit y Council	<p>We believe that KABATA’s assertion that the noise effects on the GHURHD and other historic elements on Government Hill are "significantly minimized" by the Cut and Cover Tunnel listed in the 5th, 6th and 7th Whereas in the DMOA are false.</p> <p>The preliminary drawings showing the right of way (Map 8-P2) show houses being left approximately 30 to 50 feet away from a major 4 lane highway. KABATA indicates in Table 4-31 that the noise impacts will be mitigated by the Cut and Cover Tunnel and by the roadbed being lowered below grade. However, that is not the case at the east end of Sunset Park, for Phase 2, where Figure 4-9 of the FEIS indicates that the highway comes up to grade, in order to provide sufficient height for the viaduct over the Railroad yards. We agree with the Alaska SHPO in their January 18, 2008 comments to the FEIS "noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places." We re-emphasize Alaska SHPO’s statement that KABATA and "FHWA did not adequately address indirect and cumulative impacts."</p> <p>While KABATA states in Table 4-31 that Noise impacts will not exceed FHWA abatement criteria, it is hard to believe that an at-grade, 4 lane highway, 50 feet from your house would have acceptable noise levels in any neighborhood. To believe otherwise indicates a lack of "quality time" spent next to highways! It is significant that Table 4-31 indicates a 5 dBA increase at Birch St. and Sunset Dr. from 59 to 64 dBA, but only a 2 dBA increase approximately 80 feet away at Birch & Vine. It is also significant to note that KABATA actually evaluated the existing sound levels at 8 sites, and estimated the existing sound levels at the other 8 sites. Government Hill estimates that the actual sound levels at the east end of Sunset Park will be similar to the existing sound levels at Ingra & 3rd Ave. or A St. & 3rd Ave. at 67 and 66 dBA, which would be above the noise abatement criteria of 65 dBA. KABATA also did not state what would happen when the actual noise levels are in excess of the FHWA abatement criteria. What mitigation will be conducted? KABATA needs to commit to actual mitigation, such as retrofitting adjacent houses to protect the residents from high noise levels when they occur.</p>	<p>The comment disagrees that the cut-and-cover tunnel is adequate to minimize noise that could affect some historic properties in Government Hill. The comment particularly concerns Sunset Park. Further, the comment concerns the indirect and cumulative impacts section of the <i>Final Environmental Impact Statement</i> saying it is inadequate in regard to noise effects to historic properties in Government Hill.</p> <p>The Section 4(f) Evaluation in the <i>Draft Environmental Impact Statement (Draft EIS)</i> and <i>Final Environmental Impact Statement (Final EIS)</i> include a detailed evaluation of cultural resources including air quality, noise, and visual quality. See Sections 3 and 5 of the <i>Final Section 4(f) Evaluation</i> for a detailed analysis of historic properties related to noise and the minimization measures of the alternatives.</p> <p>For the Recommended Alternative, the design intent in negotiating the crossing of Government Hill by using a cut-and cover tunnel for the main through highway was to minimize permanent impacts to the neighborhood. The effort to minimize impacts to the neighborhood included homes, historic properties and districts, and parks. These alternatives would cross Government Hill at its narrowest point, depress the highway in a trench, and cover the trench with a “lid.” The lid would function as usable ground surface after the project was complete. Use of a tunnel, while more expensive to construct than a surface highway, would avoid bisecting the area and would place the noise associated with a surface highway below ground.</p> <p>See the response to the Alaska State Historic Preservation Office’s (SHPO) comment on noise (319-4) in Appendix J of the Record of Decision (ROD).</p> <p>The comment says that Government Hill estimates that the actual sound levels at the east end of Sunset Park will be similar to the existing sound levels at Ingra and 3rd Avenue or A Street and 3rd Avenue at 67 and 66 dBA, which would be above the noise abatement criteria of 65 dBA. Federal Highway Administration (FHWA) has committed in the Section 106 PA and the <i>Final EIS</i> to use Context Sensitive Mitigation (CSM) to reduce or mitigate for impacts to Government Hill, which may include features that reduce noise levels.</p> <p>Since the publication of the <i>Final EIS</i>, substantial additional mitigation measures have been committed to by FHWA and KABATA regarding impacts to Anchorage and the Government Hill Neighborhood and to further advance mitigation measures for impacts to the Government Hill community. These additional commitments are specified in the Section 106 Programmatic Agreement (PA), which the SHPO and the Municipality of Anchorage (MOA) have since agreed to by signing the PA (see Appendix B of the Record of Decision [ROD]).</p>
326	9	French	Governme nt Hill Communit y Council	<p>We believe that KABATA’s assertion that the visual effects on the GHURHD and other historic elements on Government Hill are "significantly minimized" by the Cut and Cover Tunnel listed in the 5th, 6th and 7th Whereas in the DMOA are false.</p> <p>The preliminary drawings showing the right of way (Map 8-P2) show houses being left approximately 30 to 50 feet away from a major 4 lane highway. KABATA indicates in Table 4-31 that the noise and visual impacts will be mitigated by the Cut and Cover Tunnel and by the roadbed being lowered below grade. However, that is not the case at the east end of Sunset Park, for Phase 2, where Figure 4-9 of the FEIS indicates that the highway comes up to grade, in order to provide sufficient height for the viaduct over the Railroad yards. We agree with the Alaska SHPO in their January 18, 2008 comments to the FEIS that "noise will impact the qualities that make this district eligible for inclusion in the National Register of Historic Places." We re-emphasize Alaska SHPO’s statement that KABATA and "FHWA did not adequately address indirect and cumulative impacts."</p> <p>The Key Views shown in figure 3.39, discussed in paragraph 4.6.3.2.1, and summarized in Table 4-34 give an incorrect indication of the changes in visual quality. Particularly the discussion of Key View 7does not discuss that trucks and cars that will be clearly visible at an on-grade roadbed, nor do they discuss the fences that are necessary where any highway cuts directly through a residential neighborhood. That discussion states "The Erickson Alternative would have a major effect on the visual quality represented in this view." This is in conflict with Table 4-34 which states that the change in visual quality for Key View 7 would only change from "Moderate to High" to "Moderate". KABATA has also not addressed the visual impacts of Phase 2 on historic and cultural resources on the rest of the historical resources on Government Hill, or in Downtown, or Mountain View.</p>	<p>The comment disagrees that the cut-and-cover tunnel is adequate to minimize visual quality impacts that could affect some historic properties in Government Hill. The comment particularly expresses concern about Sunset Park. Further, the comment says the indirect and cumulative impacts section of the <i>Final Environmental Impact Statement (Final EIS)</i> is inadequate in regard to visual effects to historic properties in Government Hill.</p> <p>The <i>Section 4(f) Evaluation</i> in the <i>Draft Environmental Impact Statement (Draft EIS)</i> and <i>Final EIS</i> include a detailed evaluation of cultural resources including air quality, noise, and visual quality. See the response to the Alaska State Historic Preservation Office’s (SHPO) comment on noise (Comment 319-4) in Appendix A of the Record of Decision (ROD). Federal Highway Administration (FHWA) has committed in the Section 106 PA and the <i>Final EIS</i> to use Context Sensitive Mitigation (CSM) to reduce or mitigate for impacts to Government Hill, which may include features that reduce noise levels.</p> <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final EIS</i>. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), FHWA, Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPi), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project. Since the publication of the <i>Final EIS</i>, the FHWA, KABATA, SHPO, Mat-Su Borough and the MOA signed the PA in December 2008. The comment’s issues were addressed in the PA as follows.</p> <p>FHWA views the historic properties on Government Hill as part of the broader Government Hill community setting and commits to mitigation and project design solutions developed in a manner that promotes the significant historic characteristics and continued viability of the neighborhood that were documented in the <i>Final EIS</i> and PA.</p> <p>In stipulation III.H the PA specifically mentions visual impacts:</p> <p>FHWA shall consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design</p>

					<p>phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.</p> <p>The PA developed through the Section 106 process stipulates that the MOA will receive assistance for historic preservation planning under Stipulation IV a, 3.a which states</p> <p>FHWA will provide funding to the MOA to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed in IV.A.3.b), Downtown, South Addition, and Fairview (Appendix F, <i>Community Council District Boundaries</i>), and provide for the South Addition historic property baseline inventory. Not later than six (6) months after the date of this PA, FHWA shall negotiate and enter into a MOU with the MOA to fund these Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management “tools” that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., <i>Final EIS Traffic Impacts</i>. In addition to new funding, the MOA will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The MOA shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the Record of Decision (ROD).</p> <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts. To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p>
326	10	French	Governme nt Hill Communit y Council	<p>KABATA and FHWA assert that the Cut and Cover Tunnel is an important mitigation measure, and we admit that it is superior to an entirely at-grade connection. However, it is important to note that KABATA proposes to dig up and rip apart the Government Hill neighborhood not just once, but twice. Refer to the following statement from page S-8 of the FEIS Summary. "Moreover, based on constructability or project economics, certain elements from Phase 2 (e.g. initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1." The multi-year impacts of a construction project of this scale will bankrupt the businesses, and drive a significant number of residents to leave, not just those who have their homes and businesses directly taken by KABATA. It is absolutely unacceptable to have those impacts take place during Phase 1, and then to have them again take place again several years later. The entire Cut and Cover Tunnel <u>MUST</u> take place in Phase 1 if this bridge will be built. KABATA must not be allowed to exhume the body to violate it again during Phase 2.</p>	<p>The comment proposes to construct the entire cut-and-cover Tunnel during Phase I, rather than postponing certain elements to Phase 2.</p> <p>The Anchorage Approach, as with the rest of the KAC Project, will be constructed in phases to provide needed capacity as traffic volumes grow. Traffic modeling indicates the need to expand the Anchorage Approach to four lanes and to connect to the Ingra-Gambell Couplet by way of a viaduct across the Ship Creek rail yard in Phase 2 by the design year 2030.</p> <p>The timing of the need for elements described in Phase 2 is based on the best traffic modeling and economic information available. Traffic studies show that the A-C Couplet currently has capacity available for additional traffic until about 2023. When traffic demand increases to the point that additional capacity will be required, Phase 2 will be constructed.</p> <p>If traffic demand grows faster than anticipated, elements described for Phase 2 could be constructed earlier. Conversely, if traffic demand grows slower than anticipated, the need for additional capacity could occur later than currently anticipated. Moreover, based on constructability or project economics, certain elements from Phase 2 (such as initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1.</p> <p>To limit the disruption to the community, Stipulation III.H in the Programmatic Agreement (PA), commits the Federal Highway Administration (FHWA) to “consult and collaborate with the Government Hill Board on behalf of the Government Hill Community Council (GHCC) early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.” Further, Stipulation III.K states:</p> <p>FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School.</p>
326	11	French	Governme nt Hill Communit y Council	<p>The DMOA fails to describe actual, concrete mitigation for how the loss of important contributing elements will be compensated. We agree with the Alaska SHPO in their January 18, 2008 comments to the FEIS that "Simply documenting the destroyed buildings, offering to sell the impacted buildings and supplying a very nominal amount of planning money does not appropriately compensate for the loss of an entire streetscape of an important historic district."</p> <p>The demolition of some of the many historic properties on Government Hill will not be mitigated by the \$71,000 proposed in the DMOA. That GHCC would be "bought off" for such a sum is a violation of the principals of NEPA and the National Historic Preservation Act. The mitigation requirements outlined in the GHCC PowerPoint Presentation that was shown at the initial meeting of the Context Sensitive Solution workshops in December 2005 (starting on page 591 of Appendix L) will form a starting point for actual Section 106 consultation. We further emphasize that the historical mitigation not be mixed into the mitigation or reimbursement for the private, commercial, residential property "taken" for this project, or for the reimbursement for businesses that are put out of business by this project. GHCC believes that the "\$1 million for historic preservation in the Matanuska Susitna Borough and \$1 million for historic preservation in Anchorage and funding the Anchorage Historic Preservation Officer position for three years to administer this fund" (listed in the January 18, 2008 letter from SHPO) may be a starting point for just the historical mitigation, but as KABATA often states, "Under the Section 106 process, a Memorandum of Agreement (MOA) is being developed to address mitigation for adverse effects."</p>	<p>The comment says that “[t]he DMOA fails to describe actual, concrete mitigation for how the loss of important contributing elements will be compensated ...”</p> <p>To date, \$2.2 Million has been committed for planning and Section 106 activities for the Municipality of Anchorage (MOA) and the Matanuska-Susitna Borough (Mat-Su Borough). The portion of funds dedicated to mitigation has been determined to be reasonable by the signatories to the Programmatic Agreement (PA).</p> <p>See the response to the Alaska State Historic Preservation Office’s (SHPO) comment on noise (319-8) in Appendix A of the Record of Decision (ROD).</p> <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final Environmental Impact Statement (Final EIS)</i> upon which this comment was based. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), SHPO, Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), FHWA, MOA, Mat-Su Borough, Knik Tribal Council, Knikatu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHP), Anchorage Historic Properties, Inc. (AHP), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project. Since the publication of the <i>Final EIS</i>, the FHWA, KABATA, SHPO, Mat-Su Borough and the MOA signed the PA in December 2008.</p>

					<p>In the PA under Stipulation III, <i>Mitigation Measures</i>, specific mitigation measures are outlined for impacts to resources in the MOA and Mat-Su Borough including historic preservation planning assistance. The PA is written to focus on the affected resources, the process for notification should there be unforeseen impacts, and the roles and responsibilities of the Consulting Parties.</p> <p>In Stipulation V, <i>Development of Standard Mitigation Agreements (SMAs)</i>, the PA states that based upon the information developed in accordance with the MOUs with the MOA, Mat-Su Borough, SHPO, and the Tribes, the Federal Highway Administration (FHWA), in consultation with the SHPO, and other consulting parties, as appropriate, shall determine the need to develop and implement additional mitigation measures for both Phase 1 and Phase 2 of the KAC Project.</p> <p>FHWA shall use MOUs to carry out Stipulation III.G, <i>Government Hill Neighborhood Plan</i>, and Stipulation IV.A, <i>Certified Local Government Historic Preservation Plans</i> and Stipulation IV.A.2, <i>Tribal Traditional, Religious, and Cultural Preservation</i> and as a continuation of the financial investment that has already been made to the MOA and the Mat-Su Borough to address adverse impacts that have been identified during the Section 106 process. FHWA will use information developed under the terms of the separate MOUs as guidance to negotiate SMAs and other mitigation required per the terms of this PA for Phase 1 and Phase 2.</p> <p>Stipulation IV, <i>Additional Mitigation Measures for Indirect Effects</i>, of the PA provides staff to Mat-Su Borough and to the Tribes to assist in preservation planning efforts. The PA also provides assistance to the MOA for historic preservation planning and to Government Hill for neighborhood planning. The PA also provides for a KABATA Liaison to assist all Consulting Parties in the implementation of the PA. FHWA and ACHP believe this is the most sustainable method for implementing the PA.</p> <p>All private property, including businesses, needed for the construction of this project will be acquired in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, and the Alaska Relocation Assistance and Real Property Acquisition Practices, AS §34.60.010 et seq. and will not be confused as historic or Section 106 mitigation.</p>
326	12	French	Governme nt Hill Communit y Council	<p>We would like to answer the question posed by the Alaska SHPO in their January 18, 2008 comments to the FEIS: "Are there design alternatives that still must be considered?" GHCC feels that two important alternates that would have far less impact to historic and cultural resources (that are supposedly protected by Section 106) that have not received adequate consideration: The Boniface Alternative which was rejected by the Scoping Summary Report, but was the preferred alternative in the 1984 DEIS for the Knik Arm Crossing; and the Anchorage Access Solution (AAS) that came out of the initial CSS meeting in Dec 2005. As stated in GHCC's extensive November 17, 2006 comments on the DEIS, the AAS was grossly misrepresented by KABATA in the DEIS and FEIS. The Phase 2 variant crossing at Elm Street is just one of many possible Phase 2 alternates, including some that closely resemble Phase 2 for the Degan variant. The GHCC pointed out to KABATA and FHWA prior to issuance of the DEIS that they were misrepresenting the AAS, but were completely ignored. The release of the DEIS served as our "response". Phase 1 of the AAS had no impacts to Historic Properties protected by Section 106 and Parks protected by Section 4(f). If a Degan-like variant for Phase 2 was selected, it would have fewer impacts on Section 106 and 4(f) cultural resources, with a minor compromise. Namely the curves necessary from Government Hill to the Viaduct over the Railroad Yards to Ingra/Gambell would need to be at a tighter radius than a 50 MPH design speed. However, Phase 2 would be similar to the speeds for Phase 1, which are limited to 35 MPH at Loop Road and the A/C Couplet Bridge. KABATA had a nominal response to Comment 291-42, only stating that their design criteria for new construction was followed, and acknowledging that 35 MPH for existing elements was OK. We do not believe that a reduction in speed to 35 MPH in the last mile of a 30 mile crossing would result in any significant loss in commuting time.</p> <p>We conclude this summary with the following comment taken from the Municipality of Anchorage's November 17, 2006 comments on the DEIS. "Lack of Alternatives: The three alternatives presented for public review do not provide the Municipality or the public an adequate range of options to consider. The description of the Degan and Erickson alternatives as different and distinct is not convincing. These two routes are virtually identical in terms of every key impact on the affected neighborhoods and the entire Anchorage community. Offering these as the only "build" alternatives leads the public to believe FHWA has either predetermined the exact route of the project or is trying to create a fatal process flaw designed to derail the project. Both of those outcomes are unacceptable." The FEIS is fatally flawed.</p>	<p>The comment says that "GHCC feels that two important alternates that would have far less impact to historic and cultural resources (that are supposedly protected by Section 106) that have not received adequate consideration: The Boniface Alternative ... and the Anchorage Access Solution (AAS)"</p> <p>The Boniface Corridor had several issues that could not be overcome. The Council on Environmental Quality (CEQ) defines reasonable alternatives as those "that are practical or feasible from a technical and economic standpoint and using common sense" (CEQ 1986). Section 2.5.4.3.3 of the <i>Final Environmental Impact Statement (Final EIS)</i> discusses the Boniface Parkway corridor in detail. Based on its reduced efficiency, high initial construction costs, and excessive, adverse impacts to military operations and mission, this corridor was determined not to be reasonable and was eliminated from further consideration.</p> <p>The Government Hill Community Council (GHCC) Anchorage Access Solution was considered and refined in consultation with the Government Hill Community Council Steering Committee. This alternative was evaluated against purpose and need and technical screening criteria as were all of the other alternatives. The resulting alternative, the Elm Street Alternative, was determined unreasonable by the Federal Highway Administration (FHWA). It would:</p> <ul style="list-style-type: none">• result in the relocation of 148 Elmendorf households, right-of-way (ROW), and facilities at an approximate cost of \$111.3 million in addition to construction costs• use Harvard Park and the Government Hill Elementary School playground, both of which FHWA determined to be Section 4(f) properties• result in the relocation of 66 Government Hill households, more than any other variant, at an approximate cost of \$11,529,000 in addition to construction costs• result in the relocation of 11 Government Hill commercial properties at an approximate cost of \$5,967,000 in addition to construction costs• result in the relocation of industrial properties within the Ship Creek rail yard at a cost of approximately \$5,717,000• necessitate construction of approximately 3,700 feet (1,500 + 2,200 feet) of depressed roadway tunnel approaches to meet the required depths for two tunnels• create excessive adverse effects to military land and operations, including relocation of Elmendorf's central roadway, the relocation of its principal access gate, and exacerbation of its housing shortage• adversely affect community cohesion on the east side of Government Hill with an open trench with engineered vertical walls that would require bridges to maintain connectivity to the rest of the community• traverse two National Register historic districts and adversely affect two individually eligible properties, the Square & Round Dance Club and historic water tower <p>The comment notes that a reduction in speed from 50 mph to 35 mph on a particular curve would not significantly affect commuting time. The project design speeds were based on AASHTO design standards. The Elm Street Alternative was thoroughly analyzed. The analysis is contained in <i>Final EIS</i> Section 2.5.4.3.</p> <p>The full response to the Municipality of Anchorage's (MOA) comments on the <i>Draft Environmental Impact Statement (Draft EIS)</i> are located in Appendix K of the <i>Final EIS</i>. The following information addresses the commenter's concerns about the adequacy of the range of alternatives considered.</p>

					<ul style="list-style-type: none">Multimodal alternatives were also evaluated in the Draft EIS, and although they were complementary to the proposed project, they were found not reasonable based on the purpose and need for this project. See Section 2.5 of the <i>Draft EIS</i>.Although the Degan and Erickson alternatives were similar, there were significant differences that are described in Section 2.5 of the <i>Draft EIS</i> and <i>Final EIS</i>. The differences in impacts, particularly to Government Hill, are also described in Chapters 3 and 4 of the <i>Draft EIS</i> and the <i>Final EIS</i>. Especially see Sections 4.1.1.2.3, 4.2.1.3, 4.2.4.2.1, 4.2.2, 4.2.7, 4.4.1.2.1, 4.5.2, 4.6.1.1.2, 4.6.3, 4.7.3, 4.8.3.4, 4.8.7.3.4, and 4.9 of the <i>Final EIS</i>.The comment also says that it appears that the selection of the Erickson Alternative as the Preferred Alternative was predetermined. The FHWA EIS process is objective and highly regulated to ensure that the final decisions on the project are made in the best overall public interest. The process of developing and screening alternatives began with the scoping activities during 2004 and 2005. Nearly 100 meetings were held to discuss the development of the range of alternatives and the screening of the alternatives to identify reasonable alternatives for further study. More than 1,000 comments were received and a wide variety of outreach tools were used in the development of purpose and need, and developing and screening the range of alternatives. This extensive scoping process was established to allow the proposed project to respond to and evolve as a result of input from the public, local governments, agencies, military, and tribes. A list of scoping components highlighting the extensiveness of the scoping process can be found in the <i>Scoping Summary Report: Comments, Issues, and Alternatives (FHWA, 2005)</i>.Contact with Government Hill residents was initiated early and was ongoing throughout the NEPA process. In addition to public meetings, newsletters, newspaper articles, and post cards that were part of a comprehensive public outreach program, 18 meetings were held between February and December 2005, 3 meetings were held between May and October 2006, and 7 meetings were held between May and September 2008.As part of the range of alternatives, three bridge crossing corridors and seven corridor routes that crossed military land—including the Boniface Alternative—were evaluated and are documented in Section 2.5 of the <i>Draft EIS</i>. A wide range of alternatives were developed early in the project, and continued to be refined during the screening process. These alternatives included the following:<ul style="list-style-type: none">Point MacKenzie Road AlternativeNorthern Access AlternativeSouthern AlignmentPerpendicular AlternativeSkewed AlternativeBelow the Bluff CorridorAbove the Bluff CorridorDegan Street VariantErickson Street VariantWest Bluff Drive VariantElmendorf VariantBoniface Parkway CorridorMuldoon Road CorridorHiland Road CorridorPost Road/Reeve Boulevard Corridor <p>FHWA determined that some of these corridor alternatives were not reasonable because of reduced travel efficiency, excessive adverse impacts to the military, and financial feasibility.</p>
326	14	French	Governme nt Hill Communit y Council	<p>A/C Couplet Bridge: Comment 291-31 - A/C Couplet Bridge does not have seismic capacity to provide access to KAC for evacuation. The response to comment 291-31 included the following:</p> <p>"Travel demand analysis has been conducted and it has been determined that the A-C Couplet has adequate capacity to handle traffic volumes from the Knik Arm Crossing project until approximately 2023 at which time the Ingra-Gambell connection could be constructed to tie in with the Highway-to-Highway project proposed by AMATS. It is estimated that approximately two-thirds of the travel demand will shift to the Ingra Gambell Couplet once constructed."</p> <p>This response directly contradicts DOT/PF's assessment of the A/C Couplet Bridge which is listed as "functionally obsolete", and it is also on DOT/PF's 2007 Bridge Inventory list as one of only 3 bridges in the state with the comment of "Fracture Critical", meaning that it requires special inspections to ensure that it does not collapse. Contrary to the Purpose and Needs Statement, the A-C Couplet Bridge is not a reliable "redundant route".</p>	<p>The comment is concerned that the A-C bridge does not have seismic capacity to provide for emergency evacuation.</p> <p>To break down the commenter's individual concerns about seismic capability, fracture critical status, functional obsolescence, and travel demand each is discussed individually.</p> <p>Seismic capability: The A-C Couplet Bridge was constructed in the mid-1970s to the seismic standards of the time. Those standards specify construction that would avoid a catastrophic collapse and create an order of failure during a seismic event resulting in damage, but not a collapse. Because of the dated standards, various phases of retrofits have been performed.</p> <p>Fracture Critical: This does not mean that anything is wrong with the A-C Couplet Bridge. It means that certain important parts of the A-C Couplet Bridge need to be inspected on a regular schedule by a trained engineer.</p> <p>Functional Obsolescence: The A-C Couplet Bridge has adequate capacity to provide the necessary service through 2023 at which time the Ingra-Gambell connection could be constructed to tie in with the Highway-to-Highway project proposed by Anchorage Metropolitan Area Transportation Solutions (AMATS).</p> <p>Travel demand: As the comment quotes, the A-C Couplet "has been determined that the A-C Couplet has adequate capacity to handle traffic volumes to/from the Knik Arm Crossing project until approximately 2023 at which time the Ingra-Gambell connection could be constructed to tie in with the Highway-to-Highway project proposed by AMATS." Up</p>

					<p>to that time, the response given holds true that the A-C Couplet Bridge can handle the necessary evacuation traffic.</p> <p>The Alaska Department of Transportation and Public Facilities (ADOT&PF) does not design bridges to go unscathed during a seismic event, rather, a bridge may not be usable for some time or even have to be replaced, but the department has procedures for identifying problem sections, closing them off, and finding suitable detours. Thus, if for some unforeseen reason the A-C Couplet Bridge-were to fail or be rendered unusable, sufficient and adequate temporary access to the proposed Knik Arm Crossing would readily available by alternate surface street routes either with or without a connection to the Ingra-Gambell Couplet. For example, eastbound traffic could be routed to Bluff Drive, then to Ocean Dock Road, then to Whitney, First, or Second Avenues, and so on.</p> <p>It is the Crossing itself, not the existing A-C Couplet Bridge that is considered the “redundant route.”</p>						
326	15	French	Governme nt Hill Communit y Council	<p>Funding and Construction: Comment 295-49 No construction should be done until all bridge-related funding is secured. Government Hill and other organizations asserted:</p> <p>"...that the bridge and its access roads should not be constructed until all bridge related funding has been secured. If this is not done, there will be needless, adverse environmental and social impacts and community costs associated with a bridge that might never be completed."</p> <p>The FEIS response included the following:</p> <p>"Determining financial feasibility entails determining the costs to construct, operate and maintain the project on the costs side and determining the forecast traffic and toll revenue on the revenue side of the equation. These elements are then used to determine the cash flow generated in order to determine its sufficiency to support project financing. KABATA has hired numerous highly respected independent experts to determine these various elements and to assist it in determining the financial feasibility of the Knik Arm Crossing. The following provides a brief history of the financial feasibility work that has been performed..."</p> <p>The response is a justification of the [highly suspect] financial feasibility analysis. The response fails to address the underlying issue of adverse social, environmental, and community costs that will be incurred if bridge construction is started but not completed.</p> <p>In a letter dated March 24, 2007 to David Miller of FHWA from Mary Jane Michael, Executive Director of the Municipality of Anchorage's Office of Economic and Community Development, Ms. Michael stated that the MOA's Long Range Transportation Plan was amended to include language prohibiting construction on the Anchorage landside until the complete funding package is secured and the access connections and project design have been submitted for review to the Municipality of Anchorage. The excerpt is below:</p> <p>"Finally, the Anchorage Assembly and Mayor Begich, which together hold three of the five member positions on the Anchorage Metropolitan Area Transportation Study group (AMATS), recently supported a key amendment to Assembly Ordinance 2007-46(S), to include Knik Arm Crossing in MOA's Long Range Transportation Plan (LRTP), which added the following language:</p> <p>D. No construction work will begin on Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections and the project design had been submitted for review through the established municipal design review process."</p> <p>Based on this recent pronouncement by MOA decision makers, we expect that these mitigation issues must be fully resolved before construction may proceed. We look forward to working with you to address these major concerns."</p> <p>Obviously, construction of Anchorage landside approaches are prohibited until the complete funding package is in place.</p>	<p>The comment expresses concern that the KAC Project might be partially completed and then run out of financing. The suggested solution to this problem would be to prohibit construction of Anchorage landside approaches until the complete funding package is in place.</p> <p>KABATA has agreed to the Anchorage Metropolitan Area Transportation Solutions (AMATS) Long Range Transportation Plan Condition D. No construction work will begin on Anchorage landside bridge approaches until the complete funding package is secured for the bridge and the access connections.</p>						
326	16	French	Governme nt Hill Communit y Council	<p>Anchorage Access Solution: The Anchorage Access Solution (AAS) is a proposal resulting from the initial Context Sensitive Design meetings held in December 2005. As pointed out in our comments throughout Appendix K in the FEIS, KABATA and FHWA grossly misrepresented our proposed solution. The Phase 2 crossing at Elm Street was just one of many possible Phase 2 routes including some that closely resemble the Phase 2 Degan Street Variant. We have strenuously objected to the misrepresentation of the AAS as demonstrated by our comments throughout Appendix K.</p> <p>Phase 1 of the AAS was demonstrated to be both less expensive than the Degan and Erickson Alternatives and has far fewer impacts to historic properties protected by Section 106 and parks protected by Section 4(f). If a Degan-like variant was selected for Phase 2, the variant would have fewer impacts on Section 106 and 4(f) resources. A minor compromise would be required: the curves from Government Hill to the viaduct would be at tight radius that prohibits a 50 mph design speed. However, those speeds would be similar to the Phase I 35 mph loop road and A/C Couplet Bridge speeds.</p> <p>Several AAS design elements are superior to the Degan-Erickson alternatives. Intersections occur on flat ground north of Government Hill Elementary School as opposed to the middle of icy and steep "Curling Club Curve". Also, currently Loop road is a four lane road. The Erickson Variant converts Loop road to a two lane road with on and off ramps which will force both Government Hill and Elmendorf traffic on to a single ramp.</p>	<p>The comment states that "KABATA and Federal Highway Administration (FHWA) grossly misrepresented" the Anchorage Access Solution (AAS) presented by the Government Hill Community Council (GHCC), and that GHCC "strenuously objected to the misrepresentation of the AAS as demonstrated by [their] comments throughout Appendix K."</p> <p>The GHCC conceptual drawings for the Anchorage Access Solution were refined by FHWA in consultation with the GHCC Steering Committee and became the Elm Street Variant. The table below shows how they compare, and other details are provided below the table.</p> <table><tr><th>Elm Street/AAS Alternative</th><th>Erickson Alternative</th></tr><tr><td>Technical reasonableness<ul style="list-style-type: none">No tunnelMajor alterations to East Loop RoadS-curve to Ingra Gambell main road through center of Government Hill business district</td><td>Technical reasonableness<ul style="list-style-type: none">Construction of a cut-and-cover tunnel under Erickson StreetSome alterations to East Loop Road</td></tr><tr><td><ul style="list-style-type: none">Substantial impacts on Elmendorf housing (Cherry Hill and Houston, plus planned redevelopments)Substantial impacts on Elmendorf gatePotential relocation of Arctic Warrior Drive</td><td>No known military impacts</td></tr></table>	Elm Street/AAS Alternative	Erickson Alternative	Technical reasonableness <ul style="list-style-type: none">No tunnelMajor alterations to East Loop RoadS-curve to Ingra Gambell main road through center of Government Hill business district	Technical reasonableness <ul style="list-style-type: none">Construction of a cut-and-cover tunnel under Erickson StreetSome alterations to East Loop Road	<ul style="list-style-type: none">Substantial impacts on Elmendorf housing (Cherry Hill and Houston, plus planned redevelopments)Substantial impacts on Elmendorf gatePotential relocation of Arctic Warrior Drive	No known military impacts
Elm Street/AAS Alternative	Erickson Alternative										
Technical reasonableness <ul style="list-style-type: none">No tunnelMajor alterations to East Loop RoadS-curve to Ingra Gambell main road through center of Government Hill business district	Technical reasonableness <ul style="list-style-type: none">Construction of a cut-and-cover tunnel under Erickson StreetSome alterations to East Loop Road										
<ul style="list-style-type: none">Substantial impacts on Elmendorf housing (Cherry Hill and Houston, plus planned redevelopments)Substantial impacts on Elmendorf gatePotential relocation of Arctic Warrior Drive	No known military impacts										

					<table><tr><td>\$122,984,000 right-of-way (ROW) and relocation costs</td><td>\$11.5 million ROW and relocation costs</td></tr><tr><td>Relocations: 214 Residential (148 Elmendorf, 66 Government Hill) 11 commercial 6 Industrial 3 other (AT&T Alascom building, Government Hill Elementary School, or Arctic Warrior Drive)</td><td>Relocations: 16 Residential 4 Commercial 1 Temp. commercial 6 Industrial</td></tr><tr><td>Section 106 and Section 4(f) Historic Properties:<ul style="list-style-type: none">• Harvard Park• Government Hill Elementary School playground• 2 National Register historic districts• Square & Round Dance Club</td><td>Section 106 and Section 4(f) Historic Properties:<ul style="list-style-type: none">• Government Hill Urban Renewal Historic District (3 properties)• Sunset Park</td></tr></table> <p>The GHCC Anchorage Access Solution was considered and refined in consultation with the GHCC Steering Committee. This alternative was evaluated against purpose and need and technical screening criteria as were all of the other alternatives. The resulting alternative, the Elm Street Alternative, was determined by the Federal Highway Administration (FHWA) to not be reasonable. Implementation of the Elm Street Variant was determined to not be financially feasible and not technically reasonable based on the following factors. It would:</p> <ul style="list-style-type: none">• result in the relocation of 148 Elmendorf households, ROW, and facilities at an approximate cost of \$111.3 million in addition to construction costs •• use Harvard Park and the Government Hill Elementary School playground, both of which FHWA determined to be Section 4(f) properties• result in the relocation of 66 Government Hill households, more than any other variant, at an approximate cost of \$11,529,000 in addition to construction costs• result in the relocation of 11 Government Hill commercial properties at an approximate cost of \$5,967,000 in addition to construction costs• result in the relocation of industrial properties within the Ship Creek rail yard at a cost of approximately \$5,717,000• necessitate construction of approximately 3,700 feet (1,500 + 2,200 feet) of depressed roadway tunnel approaches to meet the required depths for two tunnels• create excessive adverse effects to military land and operations, including relocation of Elmendorf’s central roadway, the relocation of its principal access gate, and exacerbation of its housing shortage• adversely affect community cohesion on the east side of Government Hill with an open trench with engineered vertical walls that would require bridges to maintain connectivity to the rest of the community• traverse two National Register historic districts and adversely affect two individually eligible properties, the Square & Round Dance Club and historic water tower <p>The comment suggests that reducing the design speed (the curve radius) would reduce impacts. The majority of the impacts for the Elm Street Alternative occur with Phase 2—the connection to Ingra-Gambell. A compromise design to 35 mph curve on Phase 1 would not reduce Phase 2 impacts. The Elm Street Alternative was thoroughly analyzed. The analysis is contained in the <i>Final Environmental Impact Statement (Final EIS)</i> Section 2.5.4.3.</p>	\$122,984,000 right-of-way (ROW) and relocation costs	\$11.5 million ROW and relocation costs	Relocations: 214 Residential (148 Elmendorf, 66 Government Hill) 11 commercial 6 Industrial 3 other (AT&T Alascom building, Government Hill Elementary School, or Arctic Warrior Drive)	Relocations: 16 Residential 4 Commercial 1 Temp. commercial 6 Industrial	Section 106 and Section 4(f) Historic Properties: <ul style="list-style-type: none">• Harvard Park• Government Hill Elementary School playground• 2 National Register historic districts• Square & Round Dance Club	Section 106 and Section 4(f) Historic Properties: <ul style="list-style-type: none">• Government Hill Urban Renewal Historic District (3 properties)• Sunset Park
\$122,984,000 right-of-way (ROW) and relocation costs	\$11.5 million ROW and relocation costs										
Relocations: 214 Residential (148 Elmendorf, 66 Government Hill) 11 commercial 6 Industrial 3 other (AT&T Alascom building, Government Hill Elementary School, or Arctic Warrior Drive)	Relocations: 16 Residential 4 Commercial 1 Temp. commercial 6 Industrial										
Section 106 and Section 4(f) Historic Properties: <ul style="list-style-type: none">• Harvard Park• Government Hill Elementary School playground• 2 National Register historic districts• Square & Round Dance Club	Section 106 and Section 4(f) Historic Properties: <ul style="list-style-type: none">• Government Hill Urban Renewal Historic District (3 properties)• Sunset Park										
326	17	French	Governme nt Hill Communit y Council	<p>Teambuilding Initiative: 291-4 From Section 1.4 of the Knik Arm Crossing Report on pages 1-3:</p> <p>"Because the proposed Knik Arm Crossing project was deemed nationally significant, FHWA selected it for participation in the NEPA TeamBuilding Initiative. The goal of this FHWA initiative is to improve the quality and timeliness of transportation development projects while ensuring stewardship of the human and natural environment. In addition, the TeamBuilding Initiative aims to assess potentially controversial impacts early in the NEPA process; use conflict-resolution techniques; build public trust through an effective public involvement process; identify opportunities to integrate innovative technology and data tools; and improve documentation of impacts from the proposed project and records."</p> <p>Our comments and the official response in regards to the TeamBuilding Initiative: Comment: 291-4</p> <p>"Government Hill firmly believes that if the stakeholders had been allowed to follow the TeamBuilding Initiative, reviewing reasonable alternatives in good faith, the resulting DEIS may have been a strong document that could have received broad support. Instead, the DEIS is fatally flawed."</p> <p>Response: “The Knik Arm Crossing Draft EIS was conducted in accordance with the National Environmental Policy Act (NEPA) and 36 CFR 800, Protection of Historic Properties. The consultation process is ongoing through the Final EIS. The Interdisciplinary Team was established specifically for environmental resource and regulatory agencies, and local governmental officials. A concurrent public involvement process was established that included outreach to the general public, group meetings, community council meetings, public scoping meetings, public workshops, and newsletters. In addition, 14 separate meetings were held with the GHCC or its representatives during the Draft EIS process.</p> <p>As a result of the scoping process, reasonable alternatives were identified and brought forward for study in the Draft EIS, including</p>	<p>The comment states that there was a “total failure to adhere to the guidelines established by the TeamBuilding Initiative.”</p> <p>The Federal Highway Administration (FHWA) followed the TeamBuilding Initiative. The TeamBuilders initiative was about strengthening the FHWA Alaska Division Office staff by bringing in FHWA personnel from around the country when special expertise was needed. The FHWA HQ Team Builders sent in special expertise in the National Environmental Policy Act (NEPA), legal, geological, hydrological, media, natural environment, air quality, PlanBuilder modeling, bridge engineering, cost estimating, finance, Historic Preservation, Native American consultation, and Context Sensitive Solutions fields. In addition to the staff sent to Alaska to work in the field on the KAC Project, many others assisted the FHWA Alaska Division by reviewing draft documents and providing guidance.</p> <p>The extensive scoping process documented in the <i>Scoping Summary Report: Comments, Issues, and Alternatives</i> (FHWA, 2005), demonstrates that the guidelines were followed from the beginning. The TeamBuilding Initiative was carried forward following completion of the <i>Final Environmental Impact Statement (Final EIS)</i> in the Preliminary Section 106 Mitigation Options for the Government Hill Urban Renewal Historic District (May 15, 2008).</p> <p>The CSS workshop (December 2005) was an activity of the Teambuilding Initiative. As a follow-up to the CSS workshop, FHWA hosted a stakeholder meeting in response to Government Hill Community Council (GHCC) requests. Attendees at this meeting included representatives of the GHCC, the Municipality of Anchorage (MOA), and Alaska Railroad Corporation (ARRC). Following the stakeholder meeting, three one-on-one meetings between Study Team members and a representative of the GHCC were held to further define its request to look at additional corridors. GHCC representatives identified a modification of the Anchorage Access Solution (AAS), known as the “Elm Street Variant,” that would connect to the Below-the-Bluff Corridor.</p> <p>The primary effect of Government Hill’s participation is an ongoing commitment by the project sponsors to conduct</p>						

				<p>the Anchorage Access Solution. The Anchorage Access Solution was refined in consultation with the GHCC Steering Committee. The resulting alternative, the Elm Street Alternative, was determined by FHWA to not be reasonable. The results of the Elm Street Alternative analysis are contained in Section 2.5.4.3."</p> <p>The above response does not address the total failure to adhere to the guidelines established by the TeamBuilding Initiative. There are several TeamBuilding Initiative comments in Appendix K of the FEIS. Not a single response addresses the issue. Every response consists of the stock language used above.</p>	<p>context sensitive design sessions with the Government Hill community during project design. Other mitigation commitments resulting from these sessions have been included in the <i>Final EIS/Final Section 4(f) Evaluation</i>.</p> <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final EIS</i> upon which this comment was based. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), GHCC, FHWA, MOA, Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project.</p> <p>In addition to the minimization measures within the <i>Section 4(f) Evaluation</i>, the Section 106 PA states that, "FHWA shall implement Context Sensitive Mitigation (CSM) to minimize and mitigate adverse effects of the KAC Project to Government Hill and maintain the Government Hill neighborhood's building and landscape character, as nearly as practicable, and shall consult and coordinate with the MOA, SHPO, and the GHCC and their representatives to consider the Government Hill Neighborhood Plan and Government Hill Historic Preservation Plan to the extent such plans have been completed ... The Government Hill Board will be consulted early and frequently during the design phases to address design specifics, such as the tunnel lid and reestablishing character defining features. Initiation of CSM coordination with the Government Hill community will begin coincidental with the beginning of design development for the project."</p> <p>The PA includes a mitigation section under Stipulation III, <i>Mitigation Measures</i>, which focuses on the resources affected in Government Hill including the Government Hill Urban Renewal Historic District. The cut-and-cover tunnel, architectural documentation, preservation planning, and Context Sensitive Mitigation are all part of the mitigation measures in Government Hill being implemented to avoid, minimize, and mitigate the direct and indirect impacts to the streetscape and the Government Hill Urban Renewal Historic District.</p> <p>Stipulation III.H of the PA concerns <i>Federal Highway Administration Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.</p>
326	18	French	Governme nt Hill Communit y Council	<p>Purpose and Need Criterion Shortfalls: The Bridge as described in the FEIS fails to meet requirements delineated in item 3 of the primary "Purpose and Needs". It is does not meet Criterion P&N-2, P&N-3, P&N-4, and it does not provide:</p> <p>"transportation system redundancy for alternative travel routing and access between regional airports; ports; hospitals; and fire, police, and disaster relief services for emergency response and evacuation."</p> <p>The following quote (with emphasis added) from page 5 of KABATA's 2007 Annual Report indicates a major retreat from one of the key components of the so-called Phase 2 expansion:</p> <p>"The majority of the project would be a minimum of one-lane in each direction to start with, and engineered to easily expand in the future. On opening day the project would connect into the Anchorage network via the A/C Couplet. When traffic increases, TOLL REVENUE COULD HELP finance an extension to the Ingra/Gambell Couplet and add through lanes."</p> <p>KABATA has repeatedly asserted that toll revenues will finance both operations and maintenance costs, as well as the eventual construction in Phase 2 of the 4 lane bridge and connecting roads needed to make the KAC effective. Thus KABATA's preferred alternate as described in the FEIS and KABATA's 2007 Annual Report, does not meet Criterion P&N-2:</p> <p>"Would be financially feasible, based on the ability to finance a total estimated project cost not-to-exceed \$600 million (this criterion is for initial construction costs of the facility, Phase 1, and does not include ultimate build-out capacity that would be funded through toll-backed financing)."</p> <p>It also does not meet Criterion P&N-3:</p> <p>"Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs".</p> <p>We agree with the Municipality of Anchorage when they said in their Comments to the DEIS:</p> <p>"Our analysis projects a daily volume of 160-480 gravel-haul trucks based on the DEIS information, in addition to other tractor-trailer trucks from the Bridge through our Downtown District. This is detrimental to the Municipality. Moreover, projected traffic volumes on the proposed Phase I connector alternatives via the A/C Couplet are unworkable. Our analysis indicates the A/C Couplet Viaduct over Ship Creek will be over capacity and dysfunctional well before projected in the DEIS."</p> <p>Because of these unacceptable effects on the connecting transportation networks, KABATA's preferred alternate does not meet Criterion P&N-4:</p> <p>"Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered."</p>	<p>The comment says that the Recommended Alternative does not meet Criteria P&N-2, P&N-3, P&N-4, and it does not provide: "transportation system redundancy for alternative travel routing and access between regional airports; ports; hospitals; and fire, police, and disaster relief services for emergency response and evacuation," which is part of the Purpose and Need statement.</p> <p>The criteria cited in the comment were used during the <i>Final Environmental Impact Statement (Final EIS)</i> process to evaluate and determine whether an alternative was "reasonable" when considering whether the alternative met the Project's Purpose and Need. The Purpose and Need statement is multi-faceted and does not rely on meeting just one of the need objectives. Section 2.2.1 explains the P&N criteria that were used to determine whether alternatives met the purpose and need objectives, which are discussed in detail in Section 1.0. The need components of the Purpose and Need Statement provided the flexibility for consideration of a large range of alternatives including roadway, non-roadway, and multimodal alternatives including expanded ferry and rail. The following criteria are the subject of the comment:</p> <ul style="list-style-type: none">• Criterion P&N-2 Would be financially feasible, based on the ability to finance a total estimated project cost not-to-exceed \$600 million (this criterion is for initial construction costs of the facility, Phase 1, and does not include ultimate build-out capacity that would be funded through toll-backed financing)• Criterion P&N-3 Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs• Criterion P&N-4 Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered <p>In regard to Criterion P&N-2 and P&N-3, other than the initial federal investment and state matching funds, KABATA is responsible for financing the bridge through revenue bonds, other loans, or private investment, all of which would be repaid by toll revenue. KABATA engaged Wilbur Smith Associates (WSA), an independent traffic and revenue consulting firm, to perform traffic and toll revenue studies for the KAC Project. The results of both the WSA Preliminary and Intermediate Traffic and Toll Revenue Studies indicate forecasted traffic volumes are sufficient to support operations and maintenance of the facility, service project debt incurred to finance the construction, fund future expansion obligations, and provide a return opportunity for equity investors in the project.</p> <p>The timing of the need for elements described in Phase 2 is based on the best available traffic modeling and economic information available at this time. Traffic studies show that the A-C Couplet currently has capacity available for additional traffic until about 2023. By the design year 2030, traffic modeling indicates the need to expand the bridge crossing and Mat-Su and Anchorage Approach alternatives to four lanes and to connect to the Ingra-Gambell Couplet by way of a viaduct across the Ship Creek rail yard in Phase 2.</p> <p>The KAC Project will be constructed in phases to provide needed capacity as traffic volumes grow. The phases include</p>

				<p>The Government Hill Community Council supports the comments on the FEIS by Trustees for Alaska, the Alaska Public Interest Group, the Alaska Transportation Priorities Project and others that comment on the critical shortcomings of the Purpose and Needs.</p>	<p>an initial minimum two-lane Northern Access, Crossing (8,200-foot bridge structure and connecting roadway sections on gravel fill), and the Anchorage Approach, which is a connection via Erickson Street to Loop Road/A-C Couplet in Phase 1. When traffic demand increases to the point that additional capacity will be required, Phase 2 will be constructed. If traffic demand grows faster than anticipated, elements described for Phase 2 could be constructed earlier and conversely, if traffic demand grows slower than anticipated, the need for additional capacity could occur later than currently anticipated. Moreover, based on constructability or project economics, certain elements from Phase 2 (such as initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase 1.</p> <p>Responses to comments made by the Municipality of Anchorage (MOA) on the <i>Draft Environmental Impact Statement (Draft EIS)</i> can be found in Appendix K of the <i>Final EIS</i>.</p> <p>In regard to Criterion P&N-4, although traffic delays could occasionally occur with the KAC Project, just as they do now without it, in comparison to the No-Action Alternative, a ferry, or a rail connection between Anchorage and the Mat-Su the Recommended Alternative would be more efficient. The Recommended Alternative would use vehicles operating on public roads, streets, or highways. A roadway mode would link Anchorage to the Port MacKenzie District and provide 24-hours-per day, 7-days-per week, unlimited access for both freight and passenger vehicle transport and also provide efficient emergency access. A roadway would not involve delays in loading and unloading passengers and capacity and travel demand would be expected to meet projected regional growth needs.</p> <p>As for transportation system redundancy, if for some unforeseen reason the A/C viaduct ("A-C Couplet Bridge") were to fail or be rendered unusable, sufficient and adequate access to the proposed Knik Arm Crossing would readily available by alternative surface street routes either with or without a connection to the Ingra/Gambell Couplet. It is the Crossing itself, not the existing A-C Couplet that is considered a "redundant route."</p> <p>Responses to comments on the <i>Final EIS</i> by Trustees for Alaska can be found at 327-1 through 327-17, below.</p>
326	19	French	Governme nt Hill Communit y Council	<p>KABATA's 2007 Annual Report prominently displays the picture below: (IMAGE OF 2007 ANNUAL REPORT FRONT COVER, rendering of bridge)</p> <p>The bridge is depicted as two lanes lacking any sort of pullout. The Knik River bridge on the Glen Highway also was originally a two lane bridge. It experienced major problems with ice fog due to the open water and cold temperatures. It was also the site of many accidents until the second bridge was built, special lights installed, and turned into a fully divided 4 lane highway, which has lessened the number of crashes. If the Knik Arm Crossing is built as a two lane bridge, one can only imagine the results of a multi-car crash in the middle of the bridge due to ice fog and zero visibility on a 1.5 mile long bridge over open water in freezing conditions. It will take hours, if not days, to clear out the wreckage. That is not an "effective" road.</p>	<p>The comment expresses concern about safety and emergency pull-outs.</p> <p>It is currently proposed that ten-foot shoulders would be built as part of Phase 1 to allow for disabled vehicles and emergency conditions to be outside of traffic lanes. Phase 2 will include a barrier-separated median with two lanes in each direction and a separated pathway.</p>
326	20	French	Governme nt Hill Communit y Council	<p>KABATA's states on page 4-86 of the FEIS that there are no known major communication lines in the Anchorage portion of the KAC project. That is false. During the CSS discussions in December 2005, with Government Hill Community Council, GHCC informed KABATA that a critical high capacity fiber optic cable carrying at least half of the in-state and out-of-state communications for ALL of Alaska will be crossed by either the Degan or Erickson Tunnels.</p>	<p>Utility information in the <i>Final Environmental Impact Statement (Final EIS)</i> was based upon the best available data at the time it was completed. Communication line locations will be verified during final design activities.</p> <p>The statement from the <i>Final EIS</i> that is quoted in the comment goes on to say "any existing communication lines that would be found to be adversely affected would be relocated in cooperation with the service providers."</p> <p>Any required relocation will occur during the right-of-way (ROW) acquisition stage or as a planned part of construction.</p>
326	21	French	Governme nt Hill Communit y Council	<p>The discussion in 4.5.4.3 of hazardous materials sites in the Government Hill neighborhood are missing several known haz-mat sites. This includes the following: that OT92 extends to Site 99, and would be impacted by the Erickson Tunnel. Site 99, the former Defense Fuels site had the buried tanks removed, but the foundations for those tanks remain, which will cause much high costs when digging the trench for the Erickson Tunnel. Sunset Park is the former location of Government Hill, and as a school built in the 1950's was full of asbestos and lead-based paint, as well as having buried underground fuel tanks. We regularly find pieces of the school coming up through the grass in Sunset Park and are confident that excavations for the Erickson Tunnel will be impacted by those hazardous materials.</p>	<p>Information on contaminated sites was gathered using a variety of publicly available databases. For the purposes of investigating hazardous materials concerns, the Study Area was defined as the area with 100 feet of the outer limits of the right-of-way (ROW) for the proposed alternatives.</p> <p>The comment states that some hazardous materials sites are missing from the <i>Final Environmental Impact Statement (Final EIS)</i> including OT92, which extends to Site 99.</p> <p>According to the Environmental Protection Agency (EPA), Site 99 does not qualify for the National Priorities List (NPL) and has been designated a No Further Remedial Action is Planned (NFRAP) site. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.</p> <p>Site OT92 is one parcel of 33 identified for investigation under Superfund (CERCLA). The site is currently being addressed through state and federal actions under a CERCLA federal facilities agreement. OT92 and Site 99 were included in the April 2006 Initial Site Report (ISA), which recommends Preliminary Site Investigations (PSI) for both sites prior to construction or ROW acquisition. A PSI verifies the preliminary findings of the ISA and examines site-specific data so that the extent of contamination and remediation costs can be better defined. Additional site-specific information and sampling will be done during the final design activities.</p> <p>OT92 and Site 99 received high impact ratings. A high-impact rating was assigned to sites with a high or medium site risk rating where soil or ground water contamination above state or federal standards is known or strongly suspected to have occurred within one or more of the proposed project search corridors. Mitigation costs are estimated to be greater than \$75,000 for each site assigned a high-impact rating.</p> <p>The comment also warns that the site of the Government Hill Elementary School, now Sunset Park, is likely to be contaminated by asbestos. The former site of the Government Hill Elementary School is not listed on the State of Alaska's Contaminated Sites Database and has not been identified as a hazardous materials site by the Alaska</p>

					Department of Environmental Conservation. As such, it was not included in sites identified in the Initial Site Report. Additional site-specific information and sampling will be done during the final design activities.
326	22	French	Governme nt Hill Communit y Council	GHCC agrees with comments 274-6, 274-7, 274-8, 274-18 and 274-9 among others that the EIS is deficient with regards to direct, indirect and cumulative impacts of the KAC. The FEIS needs to include a more thorough discussion of alternatives that would avoid or minimize impacts to Section 106, 4(f), fish, wildlife, wetland trust resources, marine mammals, and other cultural and recreational resources. In particular, no specifics are given on actual mortality due to direct, indirect and cumulative impacts. Also, the summary of impacts shown in the FEIS summary minimizes the impacts.	<p>The comment states that “The FEIS needs to include a more thorough discussion of alternatives that would avoid or minimize impacts to Section 106, 4(f), fish, wildlife, wetland trust resources, marine mammals, and other cultural and recreational resources. In particular, no specifics are given on actual mortality due to direct, indirect and cumulative impacts.”</p> <p>All alternatives are presented in Section 2.5 of the <i>Final Environmental Impact Statement (Final EIS)</i>. Chapter 4 of the <i>Final Section 4(f) Evaluation</i> presents “avoidance alternatives” specific to cultural resources. The data requested by the comment is contained in technical reports prepared in support of the <i>Final EIS</i> and in existing sections of the <i>Final EIS</i> (such as the <i>Essential Fish Habitat (EFH) Assessment of the Proposed Action</i> [KABATA, 2006], <i>Terrestrial Mammal Technical Report</i> [KABATA, 2006], <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> [LGL Alaska Research Associates, Inc., 2005], and the <i>Cumulative Impacts Technical Report</i> [KABATA, 2006]).</p> <p>The comment also says that “the summary of impacts shown in the <i>Final EIS</i> summary minimizes the impacts.” The Council on Environmental Quality directs that a <i>Final EIS</i> be concise to provide a comprehensive summary of the proposed action, impacts to the natural and human environment, and measures for mitigating those impacts. The <i>Final EIS</i> is more than 1,000 pages, supported by more than 35 technical reports. These technical reports were made available to agencies and the public.</p> <p>Responses to comments 274-6, 274-7, 274-8, 274-18 and 274-9 on the <i>Draft Environmental Impact Statement (Draft EIS)</i> are in Appendix K of the <i>Final EIS</i>.</p>
326	23	French	Governme nt Hill Communit y Council	The Government Hill Community Council supports the comments on the FEIS by Defenders of Wildlife, the Marine Mammal Commission, NOAA, Trustees for Alaska, and others that identify various shortcomings in the discussion of impacts to Cook Inlet beluga whales. Among the problems identified in these comments, the discussion of impacts to the beluga whale understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale population to extinction. E.g., NOAA, Comments on the Knik Arm Crossing Draft EIS 2 (Nov. 17, 2006). The EIS, as a result, violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the bridge. E.g., Ctr. for Biological Diversity, 508 F.3d at 526-27.	<p>The comment says that “the discussion of impacts to the beluga whale understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale population to extinction. “</p> <p>The <i>Final Environmental Impact Statement (Final EIS)</i> concisely provides potential direct, construction, indirect, and cumulative impacts to belugas, and cites throughout the best available scientific information such as the <i>Essential Fish Habitat (EFH) Assessment of the Proposed Action</i> (KABATA, 2006); <i>Terrestrial Mammal Technical Report</i> (KABATA, 2006); <i>Baseline Studies of Beluga Whale Habitat Use in Knik Arm, Upper Cook Inlet, Alaska, July 2004–July 2005</i> (LGL Alaska Research Associates, Inc., 2005); and the <i>Cumulative Impacts Technical Report</i> (KABATA, 2006).</p> <p>KABATA and FHWA are working closely with NMFS to understand the challenges and avoid, minimize, and mitigate impacts to the whales. Coordination with NMFS has been ongoing during the project development and will continue during the design and permitting phases of the project.</p> <p>As a part of the National Environmental Policy Act (NEPA) process, KABATA conducted and reported on a year-long Knik Arm beluga study. In addition, direct, construction, indirect, and cumulative impacts to belugas were reported in detail in the <i>Final EIS</i>.</p> <p>As part of ongoing discussions with NMFS since the publication of the <i>Final EIS</i>, FHWA hosted a coordination meeting with NMFS, Alaska Department of Fish and Game (ADF&G), and KABATA on January 19, 2010. The purpose of this meeting was for the project team to get feedback from NMFS about the BA and the Letter of Authorization (LOA) documents developed under the ESA and the Marine Mammal Protection Act (MMPA). Topics of discussion included project schedule, bridge design and constructability, construction and operational impacts (including noise and possible “takes”), critical habitat and habitat values, and possible mitigation. Based on the information shared and questions asked at the meeting, FHWA submitted a BA and LOA to NMFS in July and August 2010. Consultation on Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) processes run concurrently.</p> <p>In response to the BA, NMFS issued a Biological Opinion (BO) for the Cook Inlet beluga whale and Critical Habitat on November 30, 2010 which states: “NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat. ... Although we conclude the project is not likely to jeopardize the continued existence of this species, we remain concerned about the potential additive effects of development projects within the habitat of these endangered whales. Conservation recommendations are provided with the opinion which are intended to mitigate potential adverse effects, and we continue to encourage FHA to fully consider and exercise its responsibilities under section 7(a)(1) of the Act. Because critical habitat has not been designated for the Cook Inlet beluga whale, this document will be a conference opinion on the Knik Arm Crossing as it concerns proposed critical habitat. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales, NMFS will issue a letter confirming this conference <i>opinion to be the biological opinion for this critical habitat</i> (See Appendix C for the complete NMFS BO).</p> <p>In the BO, NMFS concurred with all of the mitigative measures identified in the FHWA BA, but clarified that: “<i>We note that some of the measures proposed by KABATA and FHA are not specific or do not include detailed descriptions. NMFS will coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>”. FHWA and KABATA will implement the mitigation measures listed in the BO, which are:</p> <ul style="list-style-type: none">• using drilled-shaft technology for the large-diameter, permanent bridge piers as opposed to driven piles originally proposed in the KAC EIS, significantly reducing in-water noise exposure

					<ul style="list-style-type: none">• increasing bridge span lengths from the 250-foot spans discussed in the KAC DEIS to 275-foot spans, reducing the number of bridge piers from 33 to 29• scheduling temporary pile-construction activities when beluga whales are not in Knik Arm or the KAC project area in large numbers (specifically, between December 1 and July 31)• implementing a soft-start application for initial pile-driving operations• avoiding simultaneous installation and/or removal for moorage, dock, and template piles in different locations (Exception: Whenever beluga whales are not present in the project area and weather conditions are favorable, KABATA will however, coordinate with NMFS to determine whether pile driving at multiple locations would be acceptable to minimize the project's in-water duration of disturbance.)• monitoring construction-related acoustics to determine appropriate safety zones around pile-driving activities• implementing a multiple-observer monitoring program with mandatory shut-down procedures to avoid injury and minimize potential harassment to beluga whales• implementing a construction contractor specification to maximize vessel-free beluga passage zones during construction• implementing NMFS vessel operation guidelines to minimize construction vessel operation impacts• implementing measures to protect water quality and flows in receiving waters• focusing mitigation for fill impacts required for roadway approach construction to maximize fishery enhancements in Knik Arm• preventing the construction of a boat launch ramp facility in association with the project so that no direct access to tidelands is provided• developing an Adaptive Management Plan in close coordination with NMFS <p>NMFS also proposed four additional discretionary conservation recommendations to further avoid and minimize adverse effects:</p> <ol style="list-style-type: none">1. “KABATA should revise their crossing design to decrease the length of the eastern abutment fill by approximately 800 feet, or to Station 810+00 as depicted in the November 2009 Proof of Concept Geological Section. This action would reduce the loss of critical habitat and present fewer long-term impacts to beluga whales which utilize the near shore areas of Knik Arm along this shoreline.2. KABATA or DOT should develop and implement a noise-reduction protocol for vessels. This plan should consider operational and engineering opportunities to reduce noise and may include such measures as using gaskets to isolate noise sources (e.g. engines, generators, winches), using moorings rather than propellers to maintain position, using non-powered barges and platforms in lieu of powered vessels, vessel speed limitations, access points, and travel corridors.3. KABAT A or DOT should halt impact and vibratory pile driving during the month of May within two (2) hours either side of low tide to reduce the exposure of beluga whales to this noise source during the spring eulachon migration.4. KABATA or DOT should develop a vessel operator beluga whale awareness briefing and operational practices to reduce the effects of construction vessels on these whales. KABATA and/or DOT should consult with NMFS to develop this program and information.” <p>As per NMFS recommendations cited above under mitigation measures to “... <i>coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective</i>”, FHWA and KABATA are committed to continued coordination with NMFS as the design phase of the project is developed and more information becomes available to evaluate these discretionary conservation recommendations in the attempt to further avoid and minimize adverse effects to the beluga whale.</p> <p>The comment also says that the <i>Final EIS</i> “violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the bridge.”</p> <p>The FHWA EIS process is regulated to ensure that the final decisions on the project are made in the best overall public interest. All of the adverse impacts identified in the KAC <i>Final EIS</i>, including indirect and cumulative impacts, were weighed against the KAC Project’s beneficial impacts, particularly those related to meeting the purpose and need: improved regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans; improved regional transportation connectivity for the movement of people and the movement of freight and goods between the Mat-Su, Anchorage, and Interior Alaska; and improved safety and transportation system redundancy. The purpose and need for the action; reasonable alternatives; and the direct, indirect, and cumulative impacts on the environment (including the social, economic, cultural and recreational, historic, physical, and natural environments) were weighed, considered, and balanced in deliberations of providing safe and efficient transportation and the benefits of the proposed action. FHWA continues to work with the agencies and public to avoid, minimize, or mitigate potential impacts of the KAC Project.</p> <p>Responses to comments on the <i>Final EIS</i> by Defenders of Wildlife, the Marine Mammal Commission, NOAA, Trustees for Alaska can be found in Appendix A of the Record of Decision.</p>
326	24	French	Governme nt Hill Communit	Government Hill Community Council agrees with the EPA in Comments 313-3, 313-4, 313-13, 313-14, the Matanuska Susitna Borough, the Municipality of Anchorage, the Corps of Engineers in comments 293-2, 293-4 and the Alaska SHPO that the FEIS has not explored and evaluated additional or true alternatives that would avoid or minimize environmental impacts.	The comment expresses concern that “the FEIS has not explored and evaluated additional or true alternatives that would avoid or minimize environmental impacts.”

			y Council		<p>The Federal Highway Administration (FHWA) EIS process is objective and highly regulated to ensure that the final decisions on the project are made in the best overall public interest. The process of developing, screening, exploring and evaluating alternatives began with the scoping activities during 2004 and 2005. Nearly 100 meetings were held to discuss the development of the range of alternatives and the screening of the alternatives to identify reasonable alternatives for further study. More than 1,000 comments were received and a wide variety of outreach tools were used in the development of purpose and need, and developing and screening the range of alternatives. This extensive scoping process was established to allow the proposed project to respond to and evolve as a result of input from the public, local governments, agencies, military, and tribes. A list of scoping components highlighting the extensiveness of the scoping process can be found in the <i>Scoping Summary Report: Comments, Issues, and Alternatives</i> (FHWA, 2005).</p> <p>A full range of alternatives to address the purpose of and need criteria for the KAC Project were identified and evaluated. These alternatives were screened using nine purpose and need criteria and eight technical criteria to determine reasonable alternatives for detailed evaluation in the EIS. In Level 1 Screening, five different transportation modes were evaluated. In Level 2 Screening, three types of bridges, two types of tunnels, and a tidal dam were evaluated. In Level 3 Screening, eleven corridors and 5 variants were evaluated. Alternatives that did not meet the screening criteria were eliminated from further consideration (see Section 2.5 of the <i>Final Environmental Impact Statement (Final EIS)</i> for details). Based on this screening, five reasonable alternatives were carried forward for evaluation in the <i>Final EIS</i>.</p> <p>The No-Action Alternative and four build alternatives were evaluated in detail. The build alternatives did not constitute entirely separate routes or unique designs; instead, they were distinct combinations of components (and their common elements) that offered obvious advantages in terms of overcoming geographic, socioeconomic, physical, environmental, and financial constraints while minimizing common impacts. The <i>Final EIS</i> provided a detailed discussion of each reasonable alternative's direct, indirect, cumulative, and construction impacts on the natural and human environment. The multimodal, transit, and non-road alternatives mentioned in the comment were evaluated, and although they were complementary to the proposed project, were found to not be reasonable alternatives based on the purpose and need for this project.</p> <p>FHWA continues to work with the agencies and the public to avoid, minimize, or mitigate potential impacts of the KAC Project.</p> <p>Responses to comments 293-2, 293-4 313-3, 313-4, 313-13, and 313-14, on the <i>Draft Environmental Impact Statement (Draft EIS)</i> may be found in Appendix K of the <i>Final EIS</i>.</p>
326	25	French	Governme nt Hill Communit y Council	<p>KABATA's interpretation of Section 4(f) and its analysis of alternatives are incorrect and insufficient, and do not meet the legal requirements of NEPA, Section 106 of the National Historic Preservation Act, or Section 4(f) the Department of Transportation Act of 1966. KABATA's conclusions are incorrect because it failed to carry forward alternatives that would not impact 4(f) resources.</p> <p>(Continuing) Problems with the Alternatives Analysis</p> <p>The first problem is that KABATA has failed to propose, adequately develop, or carry forward alternatives that would avoid adverse Section 4(f) impacts. To avoid a true alternatives analysis, KABATA narrowly defines its purpose and need (including the arbitrary \$600 million price tag) and adopts arbitrary interpretations of "prudent and feasible" KABATA admits that both the Degan and Erickson routes would adversely impact parks and historic resources. Thus, GHCC renews its objection, echoed by any others in comments to the DIES, to KABATA's characterization of the Degan and Erickson routes as actual "alternatives", they are mere variants. Courts also have recognized that "[a]n alternative route which uses any part of a park is not an alternative to use of the park." Until KABATA stops calling these routes "alternatives" and brings forward and develops alternatives that do not impact Section 4(f) resources, no true Section 4(f) analysis can occur.</p> <p>Courts have held that "[t]he mere fact that a 'need' for a highway has been 'established' does not prove that not to build the highway would be 'imprudent'" GHCC continues to disagree that there is no "prudent and feasible" alternative that would entirely avoid Section 4(f) properties. Several of the alternatives dismissed by KABATA in Table 4-2 as too costly or disruptive to choose or even to carry forward such as Boniface, West Bluff, and one variant of the Anchorage Access Solution would have negligible or no impacts on Parks and historic sites. Along the same lines, KABATA overuses the "unique problem/truly unusual factor" reasoning. Under KABATA's explanation in Table 4-2, "unique and usual" factors that disqualified particular alternatives include such mundane and common issues as "substantial military impacts" (whatever that means), "moving security gate," "high cost," and the highly speculative "more likely to lead to ultimate closure of both bases." This type of sloppy reasoning is not consistent with court decisions holding that factors such as cost, directness of route, and community disruption cannot be viewed as "unique" problems. If Congress had intended these factors to be on an equal footing with the preservation of parkland there would have been no need for section 4(f). Thus, we renew specific disagreements with these conclusions that we and others lodged during the DEIS process because we see nothing here in the final EIS that shows those objections were considered in anything other than a pro forma manner.</p> <p>We will, however, take the time to reiterate our earlier comments, not responded to in the FEIS, that the Anchorage Access Solution generated by the initial CSS meeting in Dec 2005 was grossly misrepresented by KABATA in the DEIS and FEIS. The Phase 2 variant crossing at Elm Street is just one of many possible Phase 2 alternates, including some that closely resemble Phase 2 for the Degan variant. The GHCC pointed out to KABATA and FHWA prior to issuance of the DEIS that they were misrepresenting the AAS, but we were completely ignored. Phase 1 of the AAS actually has far fewer impacts to Historic Properties protected by Section 106 and Parks protected by Section 4(f). If a Degan-like variant for Phase 2 was selected, it would have fewer impacts on Section 106 and 4(f) cultural resources, with a minor compromise, namely the curves necessary from Government Hill to the Viaduct over the Railroad Yards to Ingra/Gambell would need to be at a tighter radius than a 50 MPH design speed.</p>	<p>The comment says that "KABATA's interpretation of Section 4(f) and its analysis of alternatives are incorrect and insufficient ..."Section 106 of the National Historic Preservation Act, or Section 4(f) the Department of Transportation Act of 1966. KABATA's conclusions are incorrect because it failed to carry forward alternatives that would not impact 4(f) resources."</p> <p>Section 4(f) of the Transportation Act of 1966 requires the Federal Highway Administration (FHWA) to look at all feasible and prudent alternatives that would avoid the use of public park and recreation lands, wildlife and waterfowl refuges, and historic sites. If all feasible and prudent alternatives require the use of Section 4(f) properties, then FHWA must compare the alternatives and determine which alternative provides the least-overall-harm. Section 4(f) does not preclude the selection of an alternative that uses Section 4(f) property as long as no other feasible and prudent alternative would avoid park property. No alternatives were found to completely avoid Section 4(f) properties, but the Erickson Alternative had the least-overall-harm.</p> <p>The comment also states that the Purpose and Need Statement is drawn too narrowly and includes arbitrary measures that preclude alternatives, which avoid Section 4(f) properties, from being developed and brought forward for analysis such as Boniface, West Bluff, and a variant of the AAS. The Boniface and West Bluff alternatives were considered as detailed in Section 2.5 of the <i>Final Environmental Impact Statement (Final EIS)</i>. As described below, the Anchorage Access Solution (AAS) was thoroughly evaluated and details about this process are also provided in Section 2.5 of the <i>Final EIS</i>.</p> <p>A full range of alternatives to address the purpose of and need criteria for the KAC Project were identified and evaluated. These alternatives were screened using nine purpose and need criteria and eight technical criteria to determine reasonable alternatives for detailed evaluation in the EIS. In Level 1 Screening, five different transportation modes were evaluated. In Level 2 Screening, three types of bridges, two types of tunnels, and a tidal dam were evaluated. In Level 3 Screening, eleven corridors and 5 variants were evaluated. Alternatives that did not meet the screening criteria were eliminated from further consideration (see Section 2.5 of the <i>Final EIS</i> for details). Based on this screening, five reasonable alternatives were carried forward for evaluation in the <i>Final EIS</i>.</p> <p>The No-Action Alternative and four build alternatives were evaluated in detail. The build alternatives did not constitute entirely separate routes or unique designs; instead, they were distinct combinations of components (and their common elements) that offered obvious advantages in terms of overcoming geographic, socioeconomic, physical, environmental, and financial constraints while minimizing common impacts. The <i>Final EIS</i> provided a detailed discussion of each reasonable alternative's direct, indirect, cumulative, and construction impacts on the natural and human environment. The multimodal, transit, and non-road alternatives mentioned in the comment were evaluated, and although they were complementary to the proposed project, were found to not be reasonable alternatives based on the purpose and need for this project.</p> <p>This comment states that "the Anchorage Access Solution generated by the initial CSS meeting in December 2005 was</p>

					<p>grossly misrepresented by KABATA in the <i>Draft Environmental Impact Statement (Draft EIS) and Final EIS.</i>” The comment also states that “If a Degan-like variant for Phase 2 was selected, it would have fewer impacts on Section 106 and Section 4(f) cultural resources”</p> <p>The AAS was thoroughly analyzed, evaluated, and refined in consultation with the GHCC Steering Committee. The resulting alternative, the Elm Street Alternative was determined by FHWA to not be reasonable. The results of the Elm Street Alternative analysis are contained in <i>Final EIS</i> Section 2.5.4.3.</p> <p>This alternative was evaluated against purpose and need and technical screening criteria as were all of the other alternatives.</p> <p>FHWA determined that implementation of the Elm Street Variant would:</p> <ul style="list-style-type: none">• result in the relocation of 148 Elmendorf households, right-of-way (ROW), and facilities at an approximate cost of \$111.3 million in addition to construction costs• use Harvard Park and the Government Hill Elementary School playground, both of which FHWA determined to be Section 4(f) properties• result in the relocation of 66 Government Hill households, more than any other variant, at an approximate cost of \$11,529,000 in addition to construction costs• result in the relocation of 11 Government Hill commercial properties at an approximate cost of \$5,967,000 in addition to construction costs• result in the relocation of industrial properties within the Ship Creek rail yard at a cost of approximately \$5,717,000• necessitate construction of approximately 3,700 feet (1,500 + 2,200 feet) of depressed roadway tunnel approaches to meet the required depths for two tunnels• create excessive adverse effects to military land and operations, including relocation of Elmendorf’s central roadway, the relocation of its principal access gate, and exacerbation of its housing shortage• adversely affect community cohesion on the east side of Government Hill with an open trench with engineered vertical walls that would require bridges to maintain connectivity to the rest of the community• traverse two National Register historic districts and adversely affect two individually eligible properties, the Square & Round Dance Club and historic water tower <p>In addition, the comment says that the “substantial military impacts” found in the analysis of alternatives are “mundane and common” and that “sloppy reasoning” was used in finding alternatives that crossed military land unreasonable.</p> <p>During scoping, the military cooperated by developing a mapped list of impacts to facilities and missions. FHWA specifically met with GHCC to consider new alternatives on April 5, 6, and 12 (2005). Due to all of the alternatives suggested by Government Hill that would impact the military, another meeting was held with the military and Government Hill on May 9, 2005.In a letter received May 23, 2005, the military stated that</p> <p>[I]n order for the base to continue in operation, there can be no substantial impact on the airfield/base cantonment infrastructure. The runways and associated maintenance facilities, adjacent munitions, storage, fueling areas, emergency equipment availability, and access to the flight areas must be maintained Facilities falling within the intensely developed base core are bounded generally by the base limits to the south and west, Airlifter Drive to the north and Vandenburg Road to the east.</p> <p>All options that traversed military land—including Boniface, West Bluff, and the AAS variant—were thoroughly analyzed in regard to the military mission. Based on this analysis, FHWA determined that there would be adverse impacts to the military mission and operations, and military housing and families. In terms of travel efficiency, the routes across military land would have longer distance and travel time and would attract far fewer travelers. The routes across military land would not efficiently deliver people to their intended destinations. FHWA concluded that, based on transportation needs and efficiency, those corridors that would cross military land were not reasonable.</p>
326	26	French	Governme nt Hill Communit y Council	<p>The [Section 4(f)] process is insufficient because the Section 106 and Section 4(f) consultation is nowhere close to being concluded ...</p> <p>The evaluation cannot be considered complete or sufficient until all consulting parties and KABATA have agreed on the scope of the impacts of all alternatives, and (if protected resources are to be taken) reached agreements on mitigation measures. Neither of these steps has been taken.</p> <p>The 4(f) Evaluation admits that the coordination and consultation required by Section 106 for mitigation is incomplete. For example, between the draft and final versions of the Section 4(f) Evaluation KABATA deleted its commitment to determine mitigation before publication of the FEIS, and now suggests that consultation and coordination would "continue through the final design process." (p. 70). In its response to Comment 298-19, KABATA states:</p> <p>“The extent of adverse impacts to the Government Hill Urban Renewal Historic District will not be known in detail until specific design elements are identified.”</p> <p>For comments 298-19 to 298-23, KABATA again states that it will not know the actual extent of the adverse impacts, and again merely repeats that it is developing a Memorandum of Agreement, but has no specificity of the actual mitigation that will occur.</p> <p>Correspondence between KABATA/FHWA and the MOA and SHPO, including correspondence exchanged following publication of</p>	<p>The comment states that the <i>Section 4(f) Evaluation</i> is incomplete because the Section 106 process has not been concluded.</p> <p>Following FHWA approval of the <i>Final Environmental Impact Statement (Final EIS)/Final Section 4(f) Evaluation</i>, Section 106 activities and coordination continued to resolve mitigation measures for adverse effects to historic resources. Section 106 issues were resolved with signing of a Programmatic Agreement (PA) in December 2008. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP).</p> <p>Separate Memorandums of Understanding (MOUs) were developed for implementation of the PA to address adverse impacts identified during the Section 106 process as outlined in Section V of the PA. MOUs were executed between FHWA and the Alaska SHPO, Matanuska-Susitna Borough, Knik Tribal Council, and Native Village of Eklutna in July and September 2009 and with the MOA in January 2010. FHWA has developed MOUs with identified consulting parties to implement the mitigation measures outlined in the PA. See PA Section V, D.</p>

				<p>the Draft EIS, shows that the consultation process has barely started, with the final evaluation failing to list a single mitigation measure agreed to by either of these two consulting parties. Under these circumstances, the entire mitigation discussion starting on page 69 and continuing to page 78 should be viewed as nothing more than a series of one-sided negotiating gambits that KABATA hopes might be mistaken for a true consultation process.</p> <p>The Final Section 4(f) Evaluation incorrectly states that "[c]onsultation is ongoing" with the Government Hill Community Council (p. 69). In fact, KABATA has not worked with GHCC since early 2006, and the last exchange of emails in January and February of 2006 and letters in November and December 2006 (attached to FEIS) showed GHCC pleading with KABATA/FHWA to return to the table, an invitation that FHWA and KABATA have steadfastly refused to accept for the past 2 years. And yet, KABATA now proposes "to undertake further Context Sensitive Solutions workshop efforts with the Government Hill Community" during the final design effort! (p. 71). Under these circumstances, the proposal to allow KABATA to move forward before consulting with GHCC would be the functional equivalent of locking the barn door after all the cows have left. After-the-fact workshops cannot satisfy federal requirements to consult and to minimize harm. KABATA must be required to conclude the consultation process before FHWA issues its ROD. The GHCC agrees with US Dept of Interior in Comment 274-1:</p> <p>["We recommend that the Federal Highway Administration (FHWA) and the Knik Arm Bridge and Toll Authority (KABATA) continue their efforts to develop measures amenable to the Municipality of Anchorage and Government Hill community to mitigate the effects of the Degan and Erickson Alternatives on Section 4(f) resources and the community as a whole."] and looks forward to that process concluding before any ROD is issued and before the project moves forward.</p> <p>Finally, KABATA has neglected over the past year to consult with the Anchorage Historic Preservation Commission. AHPC was created in January of 2007 to serve as the historic preservation review commission for the purpose of maintaining the municipality as a certified local government, and to serve as the local historical district commission for the municipality under AS 29.55 and AS 45.98. AHPC has significant expertise and legal responsibilities with respect to historic properties in Anchorage and recently voted to request designation as a consulting party for purposes of complying with Section 106 of the National Historic Preservation Act, and that it be an invited signatory to any MOAs developed under Section 106.</p>	<p>A provision of the signed PA included stipulations for cultural resources surveys to be completed on military lands (PA Section II). A cultural resources survey of land managed by the Elmendorf was completed in September 2009. No cultural resources were identified as a result of survey, and a subsequent finding of No Historic Properties Affected was submitted by FHWA to SHPO on January 11, 2010 for their review and concurrence. The SHPO concurred on February 19, 2010.</p> <p>The PA includes the GHCC as a Concurring Party to the PA. The PA recognizes that the GHCC will elect a four person board to coordinate with the FHWA and KABATA (Stipulation III.H). In addition, the PA stipulates that FHWA will provide a KABATA Liaison to work with all Consulting Parties (Stipulation III.A). Government Hill was invited, but did not sign the PA.</p> <p>Additionally, since approval of the <i>Final EIS</i>, FHWA approved new regulations related to Section 4(f). The <i>Draft</i> and <i>Final Section 4(f) Evaluations</i> were prepared following 23 C.F.R. 771.135. Section 771.135 was replaced in April 2008 with 23 C.F.R. 774, which restated and clarified measures in the earlier regulations and established some relatively minor new procedures. The <i>Final Section 4(f) Evaluation</i> for the Knik Arm Crossing has been reevaluated for compliance with the new regulations and the Section 106 PA and has been found to be compliant.</p>
326	27	French	Governe nt Hill Communit y Council	[The Section 4(f) process is insufficient because] it still fails to address comments submitted by GHCC in response to the DEIS, specifically, GHCC comments 291-49 to 291-63.	<p>Comments 291-49 to 291-63 in regard to impacts to the Government Hill Neighborhood were addressed in Appendix K of the Final Environmental Impact Statement.</p> <p>Since the publication of the <i>Final Environmental Impact Statement (Final EIS)</i>, substantial additional mitigation measures have been committed to by FHWA and KABATA regarding impacts to Anchorage and the Government Hill Neighborhood. These additional commitments are specified in the Section 106 Programmatic Agreement (PA), which the State Historic Preservation Office (SHPO) and the Municipality of Anchorage (MOA) have since agreed to by signing the PA (see Appendix B of the Record of Decision [ROD]).</p> <p>Many of the conditions requested by the Government Hill Neighborhood are covered in the PA. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), SHPO, Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), MOA, Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project. It was executed by the signatories in December 2008. Stipulation III of the PA includes mitigation measures for Government Hill.</p> <ul style="list-style-type: none">• Stipulation III.E concerns <i>Architectural Documentation of Government Hill Historic Properties</i>.• Stipulation III.F concerns <i>Marketing and Relocation of Three Identified Government Hill Historic Properties</i>.• Stipulation III.G concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and• Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.• In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the MOA, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.• Stipulation III.I concerns <i>Construction of a Cut-and-Cover Tunnel on Government Hill</i> and the mitigations such as CSM that are necessary to minimize community impacts. <p>All of the signatories agreed that the PA contained adequate mitigation to address neighborhood impacts, which include streetscape impacts. To date, pursuant to the PA MOUs, funds have been provided and work is underway.</p>
326	28	French	Governe nt Communit y Council	KABATA suggests that taking 0.8 acre of Sunset Park during Phase I will not seriously impact its use; however, the ROW acquisition would remove the tree buffers and part of the mown playing field. (p. 32). The conclusion seems incorrect, as anyone who has used a park knows that removing vegetative buffer between the road and the park increases noise, smell, and negative visual impact, making the park experience less enjoyable.	<p>The comment concerns the removal of a vegetation buffer and playing field at Sunset Park, which the commenter believes will increase "noise, smell, and negative visual impact, making the park experience less enjoyable."</p> <p>Phase 1 will affect Sunset Park, however, the park could continue to function as it does today until Phase 2, which is estimated to be 11 to 12 years after completion of Phase 1. All possible planning to minimize harm to Section 4(f) property has been undertaken in selecting the Erickson Alternative.</p> <p>The <i>Final Environmental Impact Statement (Final EIS/Final Section 4(f) Evaluation</i> indicate that impacts during Phase 1 will not eliminate or require the moving of important functions of Sunset Park, such as parking, access, a shelter, and picnic tables that will be affected in Phase 2. Use and character of the park will continue much as it is today until Phase 2.</p>

326	29	French	Governme nt Hill Communit y Council	<p>Next, KABATA proposes to reclassify the remnant of Sunset Park as "Mini Park," despite problems with access and parking (p.75). How can that be called mitigation? KABATA further proposes to investigate whether Cunningham Park could be expanded into an area smaller than the 1-acre minimum for "mini parks" in Anchorage. (p. 75). Creating a discontinuous scrap of land and calling it an amenity is not mitigation. The same problem applies to the proposal to investigate creating "discontinuous patches" of land on top of the tunnel lid (p. 76). Small and discontinuous patches of land are not very functional and certainly can't make up for loss of community parks.</p>	<p>The comment says "creating a discontinuous scrap of land and calling it an amenity is not mitigation."</p> <p>The physical setting and constraints of the Government Hill Neighborhood limit the availability and location of suitable park replacement property for Sunset Park; all possible planning to minimize harm to Section 4(f) property, as defined in 23 C.F.R. 774.17, has been undertaken.</p> <p>The Erickson Alternative will require 1.70 acre of controlled-access right-of-way (ROW) through Sunset Park and 0.1 acre of controlled-access ROW along the southeastern edge of Harvard Park. All existing facilities at Sunset Park will be displaced in Phase 2: a picnic shelter, playground equipment, picnic tables, a sledding area, and the parking lot. The park could continue to function as it does today until Phase 2, which is estimated to be 11 to 12 years after completion of Phase 1. In Phase 2, the area not needed for actual project ROW will be retained as buffer/green space or mini-park for the Government Hill Community. As mitigation, pedestrian access will be provided and the park amenities will be reconstructed within the smaller space. Although Sunset Park will be reduced in size under the Erickson Alternative, pedestrian access will be reestablished, likely from the north over the tunnel lid, and all current amenities will remain in a reconfigured format.</p> <p>To minimize surface impacts, design modifications, such as use of nearly vertical walls and the cut-and-cover tunnels, have been incorporated. Open trenches with sloped sides would have used much more parkland and further hindered access to Sunset Park. Land replacement for lost park acreage was considered, but no suitable land is available on Government Hill. Monetary compensation will be provided for the loss of parkland. Additional mitigation is provided in the <i>Final Section 4(f) Evaluation</i> and through parameters set in the Section 106 Programmatic Agreement (PA).</p> <p>With implementation of Phase 2 of the Erickson Alternative, Sunset Park's remaining land will be cut off from street access by the four-lane highway built in an open trench. For loss of the Neighborhood Use Area – Neighborhood Park function of Sunset Park, KABATA has committed to provide the following mitigation:</p> <ul style="list-style-type: none">• Sunset Park Refinements. The parkland that would not be required for ROW will be proposed to be retained as a mini-park and buffer/green space for the Government Hill Community. In addition, because some use value would remain for Sunset Park, KABATA will work with the Municipality of Anchorage (MOA) to identify public access to the park over the southeastern end of the tunnel lid (near the intersection of Loop Road and Hollywood Drive), or possibly use a pedestrian crosswalk over the project roadway. In this park, a dip in topography would mean that a portion of the road would not be in a trench and would be open to the park area, at approximately the same grade. To reduce noise and visual intrusion, the trench wall could be continued across this dip in topography and, pending design coordination with the MOA, the park side of the wall could be used as a park feature. This would enhance the value of the park remnant. The existing picnic shelter will be relocated or replaced within the park. The existing playground will be physically unaffected, but will be partially relocated or fenced off from the highway. The existing picnic tables will be relocated slightly. The disturbed topography will be recontoured for park uses, including sledding. Although the existing parking lot will be eliminated, KABATA will work with the MOA to identify parking spaces at the new public access area within the new highway ROW. Subject to consultation during the project's final design, all of this will be addressed in a park planning effort conducted in consultation with the Municipal Parks Department with the goal of remaking the park, now classified as a Neighborhood Use Area – Neighborhood Park, into a workable park classified as a Neighborhood Use Area – Mini-Park. The park's existing amenities will remain on a smaller land parcel.• Cunningham Park Expansion. Subject to consultation with the MOA during the project's final design, KABATA will work with the MOA to investigate the potential of vacating the far northern end of the Cunningham Street ROW and adding the vacated land to Cunningham Park, which is currently too small to be of practical use. The vacated portion of Cunningham Street will be a segment approximately 80 feet long between East Cook Avenue and West Bluff Drive. This will add 0.13 acre to the existing Cunningham Park (0.05 acre), for a total of 0.18 acre. Although this is technically smaller than the 1-acre minimum guideline for mini-parks in Anchorage, it will be large enough for minor park development (such as overlook bench and small play area) and will be much larger than the existing Cunningham Park.• Tunnel "Lid" Park Amenities. Installation of minor park amenities will be included on the lid of the cut-and-cover tunnel along the redesigned Erickson Street. This will be addressed during a Context-sensitive Solutions workshop with the Government Hill Community. It is anticipated there may be 1–2 acres of area in discontinuous patches that will be appropriate for surface pedestrian and park activities. Although some land uses and activities may no longer be appropriate on the lid of a cut-and-cover tunnel, there will be opportunities for green space, parkland, trails, parking, playgrounds, and general interpretation for historic properties. If the final design allows sufficient space, parking and trail access directly into Sunset Park from the intersection of Hollywood Drive and Loop Road will be provided over the southeastern end of the tunnel lid.• Greenbelt Trail Construction. The Erickson Alternative will include an abutment within the Government Hill Greenbelt – East Bluff parcel for the viaduct over the Ship Creek rail yard. Although the Federal Highway Administration (FHWA) has determined that the Greenbelt parcel is not subject to Section 4(f) protection, it is important to the MOA and the neighborhood, and it provides an opportunity for mitigation of impacts on other properties that are subject to Section 4(f) protection. The easternmost half of the East Bluff is an area once mined for gravel; subject to consultation with the MOA (holder of the long-term lease) and with the Alaska Railroad Corporation (land owner) during final project design, the project will extend a paved bicycle trail from the Sunset Park area through the greenbelt to its easternmost end as proposed in the Anchorage <i>Areawide</i>
-----	----	--------	--	---	--

					<p><i>Trails Plan</i>. Land adjacent to the trail that was previously used for gravel mining and vegetation is sparse and will be landscaped.</p> <ul style="list-style-type: none"> • Payment for Parkland. The project will pay a fee based on the fair market value for the entirety of Sunset Park to be used for park planning and park replacement related to loss of Sunset Park's status as a Neighborhood Use Park. The funds will be paid to the MOA during the Phase 1 ROW acquisition phase, even though Sunset Park will remain unchanged until Phase 2 of construction. Considering the time value of money, the MOA may then take advantage of having the funds in advance for mitigation and having full use of the park for an extended period until the parkland is needed for highway construction for Phase 2. The MOA and Government Hill Community could decide together how best to use the funds to further mitigate the loss of parkland. Also, although FHWA's May 4, 2007, letter to the MOA indicated FHWA will pay for Sunset Park "if the Municipality prefers not to have the remnant of Sunset Park as a Neighborhood Use Area – Mini-Park," the <i>Final Section 4(f) Evaluation</i> clarified that it is FHWA's and KABATA's intention during Phase 2 construction to undertake the physical mitigation described above under the "Sunset Park Refinements" paragraph, no matter how the MOA might classify the resulting smaller park, <i>and</i> to pay the funds described in this paragraph for loss of Neighborhood Use Area – Neighborhood Park status. <p>All of the above is subject to further consultation and adjustment based on MOA concerns and final design features such as amount of ROW or physical space available for mitigation efforts.</p>
326	30	French	Governme nt Hill Communit y Council	GHCC questions the conclusion that the Greenbelt is not subject to Section 4(f) protection. The greenbelt is a functionally important part of both Sunset and Harvard Parks, in that it serves as a sight, sound and smell buffer between road traffic and parkland. It is also, as the MOA has pointed out, important to the neighborhood. The greenbelt creates a sense of peace, privacy, and self-containment that is a hallmark of our neighborhood.	<p>The comment questions whether the greenbelt should be considered as a portion of the Sunset and Harvard Parks' Section 4(f) property designation.</p> <p>Section 4(f) law is specific about protected lands; they must be publicly owned and open to the public, and their park or recreation functions must be significant. The Federal Highway Administration (FHWA) determined that the East Bluff and West Bluff greenbelts were green buffer areas and not significant park or recreation areas, despite their management by the Municipality of Anchorage's (MOA) parks and recreation department. The easternmost half of the East Bluff is an area once mined for gravel; it is subject to consultation with the MOA (holder of long-term lease) and with the Alaska Railroad Corporation (ARRC) (land owner) and has been determined not to be eligible for Section 4(f) protection.</p> <p>Although the Federal Highway Administration (FHWA) has determined that the greenbelts are not subject to Section 4(f) protection, it is important to the MOA and the neighborhood and provides an opportunity for mitigation of impacts to other properties that are subject to Section 4(f) protection.</p> <p>The Erickson Alternative will include an abutment within the Government Hill Greenbelt–East Bluff parcel for the viaduct over Ship Creek rail yard. During final project design, the project will extend a paved bicycle trail, as noted in the Anchorage <i>Areawide Trails Plan</i> (Municipality of Anchorage Planning Department. 1996), from the Sunset Park area through the greenbelt to its easternmost end. Land adjacent to the trail would be planted where previous gravel mining activity left sparse vegetation. In cooperation with the Parks Department, this trail could be extended to connect to the Ship Creek Trail and, via the Ship Creek Trail, to the Coastal Trail.</p>
326	31	French	Governme nt Hill Communit y Council	Next, GHCC and Civil Engineers working on similar designs and actual construction of similar projects believe that both Phase 1 and Phase 2 will not be able to be built as shown on the preliminary design drawings. We believe that the Phase 1 work will impact both the Curling Club and the Alaska Railroad Employee Recreation Center (Square & Round Dance Center, or S&RDC which is Historic element #ANC-1932). We feel that the Phase 2 work will cause the demolition of an additional 3 houses that are contributing elements to the Government Hill Urban Renewal Historic District. These conclusions are explained more fully in the Appendix to the Section 106 comments. These probable impacts need to be documented and mitigated before the project can move forward.	<p>The comment concerns several historic buildings that have not been included in the list of buildings that would be demolished during construction of the Anchorage Approach. The comment asks for documentation and mitigation before the KAC Project progresses.</p> <p>The Federal Highway Administration (FHWA), through the Section 106 process and within the <i>Final Section 4(f) Evaluation</i>, has disclosed all reasonably anticipated potential impacts to historic properties and the historic district. The analysis conducted for the Knik Arm Crossing project concludes that the properties mentioned are not expected to be affected.</p> <p>Since the <i>Final Environmental Impact Statement (Final EIS)</i>, substantial changes in mitigation commitments and extensive consultations under Section 106 have occurred with full participation by the Government Hill Community Council (GHCC) and other consulting parties. As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final EIS</i> upon which this comment was based (see Appendix B of the Record of Decision [ROD]). The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), FHWA, Municipality of Anchorage (MOA), Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPi), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects to historic properties from the KAC Project.</p> <p>In consideration of unforeseen impacts, the PA developed through the Section 106 process includes mitigation for future, unforeseen adverse effects to historic properties under Stipulation V.B, <i>Mitigation Measures for Future, Unforeseen Adverse Effects</i>. Stipulation V and Appendix B include a notification process that may be used if impacts occur differently than outlined in the <i>Final EIS</i>. The PA also includes stipulations for periodic reviews and re-evaluation of impacts prior to Phase 2 (Stipulation IX).</p>
326	32	French	Governme nt Hill Communit	The mitigation negotiations for Section 4(f) adverse affects have barely started. From the correspondence in Appendix J related to Section 4(f) resources, it is clear that the mitigation discussions are not complete. KABATA discusses moving picnic tables, and creating parking lots, but fails to commit to the actual mitigation requirements of the Municipality, such as replacing affected facilities,	This comment concerns mitigation negotiations and commitments for parks, historic properties, neighborhood uses, low-income and minority residents, deteriorated businesses, and construction impacts on businesses.

			y Council	<p>like the Square & Round Dance Center, and the Curling Club. We agree with the February 1, 2006 letter that states that Sunset Park will be wholly impacted. However, the FEIS summary says that Sunset will be only partially impacted. This is typical of the inconsistencies in the FEIS.</p> <p>GHCC agrees with the Municipality of Anchorage in their March 24, 2007 letter when it states:</p> <p>"We believe that the proposed mitigation measures are not adequate to maintain Government Hill community cohesion or the integrity of its parks, and that other alternatives need to be seriously considered as required by the EIS process."</p> <p>That letter further states</p> <p>"any land lost from Harvard or Sunset Parks will be detrimental to the community and should be replaced with land of the equivalent size and usefulness, and equivalent connection to and accessibility by the neighborhood. Both current citywide and neighborhood uses should be factored into mitigation strategies, as well as the mitigation's impact on low-income and minority residents. Replacement strategies must include facilities as well as land area - and serve existing user populations."</p> <p>That letter further states</p> <p>"We also believe it is necessary to work closely with the Government Hill Community to determine what combination of additional areas as well as enhancement or improvements in remaining park and green belt areas might provide adequate for the Degan or Erickson Alternative."</p> <p>The GHCC protests that FHWA has refused to include Government Hill Community Council in the Section 4(f) negotiations.</p> <p>The GHCC supports the Municipality of Anchorage in their March 24, 2007 letter when it states</p> <p>"One significant measure that should be included in the mitigation process is the purchase of existing deteriorated properties in the business district . . . for the development of a neighborhood business center."</p> <p>It was pointed out in GHCC's DEIS comments that all of the businesses in the GH business district will likely be bankrupted during the construction process. It is also pointed out that one of the benefits of the Anchorage Access Solution is that those "indirectly impacted" (and minority owned) businesses that would otherwise not be compensated for their losses, would be fully compensated if the Anchorage Access Solution was implemented.</p> <p>The GHCC also supports the stipulation in the Municipality's March 24, 2007 letter when it states "these mitigation issues must be fully resolved before construction may proceed."</p>	<p>Commitments made in the Record of Decision (ROD), in the <i>Final Section 4(f) Evaluation</i>, and in the <i>Final Environmental Impact Statement (Final EIS)</i> ensure all possible planning to minimize harm will continue through design and construction of both phases of the Knik Arm Crossing project, including:</p> <ul style="list-style-type: none">• Refinements to the remaining Sunset Park lands after right-of-way (ROW) is acquired include re-contouring the disturbed topography for park uses.• Cunningham Park Expansion. Subject to consultation with the Municipality of Anchorage (MOA) during the project's final design, KABATA will work with the MOA to investigate the potential of vacating the far northern end of the Cunningham Street ROW and adding the vacated land to Cunningham Park, which is currently too small to be of practical use. The vacated portion of Cunningham Street will be a segment approximately 80 feet long between East Cook Avenue and West Bluff Drive. This will add 0.13 acre to the existing Cunningham Park (0.05 acre), for a total of 0.18 acre. Although this is technically smaller than the 1-acre minimum guideline for "mini parks" in Anchorage, it will be large enough for minor park development (such as overlook bench and small play area) and is much larger than the existing Cunningham Park.• Tunnel "lid" park amenities• Greenbelt trail construction• Payment for the loss of Sunset Park to the MOA <p>As part of the Section 106 process, a Programmatic Agreement (PA) was developed to replace the Memorandum of Agreement (MoA) undertaken during the <i>Final Environmental Impact Statement (Final EIS)</i> upon which this comment was based. The PA was developed in consultation with Advisory Council on Historic Preservation (ACHP), Alaska State Historic Preservation Officer (SHPO), Elmendorf Air Force Base (Elmendorf), Government Hill Community Council (GHCC), Federal Highway Administration (FHWA), MOA, Matanuska-Susitna Borough (Mat-Su Borough), Knik Tribal Council, Knikatnu, Inc., Native Village of Eklutna, Eklutna, Inc., Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), and Alaska Association for Historic Preservation (AAHP) to address mitigation of adverse effects from the KAC Project.</p> <ul style="list-style-type: none">• Stipulation III.G of the PA concerns the <i>Government Hill Neighborhood Plan (Neighborhood Plan)</i>, and Stipulation III.H concerns <i>FHWA Consultations with the Government Hill Community</i> including working with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts.• Stipulation III.I of the PA concerns <i>Construction of a Cut-and-Cover Tunnel on Government Hill</i> and the mitigations necessary to minimize community impacts.• Stipulation III.K of the PA concerns <i>Construction Management Plans</i>. The FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School. FHWA will provide GHCC and SHPO a draft Construction Management Plan no later than the 60 percent design review. The GHCC and SHPO will provide comments on this plan as it relates to historic properties once a final draft is prepared for Phase 1 and Phase 2. <p>No mitigation plans include the "purchase of existing deteriorated properties in the business district ... for the development of a neighborhood business center." The properties in the business district are not historic and the signatories to the PA did not include mitigation for them. The PA was executed by the ACHP and SHPO in December 2008. A MOU with the MOA to carry out the provisions of the PA was signed by the Mayor on January 14, 2010.</p>
327	1	Massey	Trustees for Alaska	<p>The EIS fails to provide the reasonable range of alternatives that NEPA requires. The purpose and need statement eliminates all action alternatives other than an 8,200-foot roadway bridge over Knik Arm, FHWA, EIS § 2.8 (Dec. 2008), making it impossible to assess the true merits and impacts of the proposed bridge. The FHWA does this even though Congress has abandoned the bridge for all intents and purposes. The comments on the draft EIS by ACE et al. note that the FHWA adopted a purpose and need statement that requires a bridge over Knik Arm even though Congress rejected such a limitation by deleting the earmarks for the bridge and appropriating the funds to "any purpose eligible under section 133(b) of title 23, United States Code." Pub. L. No. 109-115, § 186, 119 Stat. 2396, 2431 (2005). An agency must "consider the views of Congress" when preparing a purpose and need statement. <i>Citizens Against Burlington, Inc. v. Busey</i>, 938 F.2d 190, 196 (D.C. Cir. 1991). In response to this comment, the FHWA acknowledges that Congress decided to "let the State of Alaska determine" what to do with the money, but the FHWA declines to revise the purpose and need statement. FHWA, EIS app. K (comment 295-20) (Dec. 2007).</p>	<p>The commenter expressed concern that the purpose and need statement was not modified after Congress revised the law deleting the earmark and re-appropriating SAFETEA-LU funds for transportation uses by the State of Alaska.</p> <p>The purpose and need for the KAC Project is to improve regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use and transportation and as directed by the Alaska State Legislature in AS 19.75 and to improve regional transportation connectivity and safety and transportation system redundancy for alternative travel routing and access.</p> <p>SAFETEA-LU originally authorized but limited the use of (earmarked) federal-aid funding for a project identified as the "Knik Arm Bridge". Subsequently on November 30, 2005, Congress appropriated partial funding in PL 109–115 (HR 3058) for SAFETEA-LU's authorizations and its §186 amended SAFETEA—LU by removing the earmarks (limiting use of the funds to the bridge) by identifying a recipient (Alaska Department of Transportation) of the funds instead of identifying a specific project for the funds as did SAFETEA-LU. The State of Alaska decided it was going to use substantially less than one-half of those federal-aid funds for the Knik Arm Crossing project and to use the remaining funds for other transportation projects around the State. Subsection 23 U.S.C. 133(b) specifies the types of Surface Transportation Program projects to which a state may obligate federal-aid funds apportioned to it and the KAC Project is an eligible project.</p> <p>The commenter also expresses concern that the purpose and need statement does not provide flexibility for consideration of a reasonable range of alternatives.</p> <p>The National Environmental Policy Act (NEPA) and its implementing Council on Environmental Quality (CEQ) regulations 40 C.F.R. Part 1500 and FHWA regulations 23 C.F.R. Part 771 govern this project's environmental impact statement and the consideration of the range of reasonable alternatives to be considered as well as the purpose and</p>

					<p>need of the project.</p> <p>The project’s purpose and need statement was defined broadly enough to allow consideration of non-bridge alternatives, and non-bridge alternatives such as ferry, tunnel and rail were considered. Multimodal alternatives were evaluated in the <i>Draft Environmental Impact Statement (Draft EIS)</i>, and although complementary to the proposed project, were found not to be reasonable alternatives based on the purpose and need for this project. See Section 2.5 of the <i>Final Environmental Impact Statement (Final EIS)</i>.</p>
327	2	Massey	Trustees for Alaska	<p>The comments on the draft EIS by ACE et al. identify language in [the purpose and need] statement that requires a Knik Arm bridge. In addition to this language, the requirement that the project improve "regional transportation infrastructure to meet . . . locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in AS § 19.75" prevents non-bridge alternatives from being considered in the EIS. Specifically, the EIS states that the "plans" cited by the FHWA "have identified needs that can be met by an efficient and financially feasible Knik Arm crossing, specifically document support for a crossing, or list such a crossing as a major development to be considered for long-range planning purposes." Id. at 1-10. Moreover, AS 19.75 establishes the Knik Arm Bridge and Toll Authority ("KABATA") expressly to construct "a bridge to span Knik Arm." In other words, the purpose and need statement can only be satisfied by a single action alternative: An 8,200-foot bridge over Knik Arm.</p> <p>The FHWA has abused its discretion by adopting an unreasonably narrow purpose and need statement. While an agency has discretion to define the purpose and need, "this discretion is not unlimited." <i>Westlands Water Dist. v. U.S. Dep’t of Interior</i>, 376 F.3d 853, 866 (9th Cir. 2004). "[A]n agency cannot define its objectives in unreasonably narrow terms," <i>City of Carmel-by-the-Sea v. U.S. Dep’t of Transp.</i>, 123 F.3d 1142, 1155 (9th Cir. 1997), "contriv[ing] a purpose so slender as to define competing 'reasonable alternatives' out of consideration and even out of existence)." <i>Simmons v. U.S. Army Corps of Engineers</i>, 120 F.3d 664, 666 (7th Cir. 1997). See also <i>Davis v. Mineta</i>, 302 F.3d 1104, 1118-20 (10th Cir. 2002). The FHWA has done this here.</p> <p>The FHWA dismisses the concerns expressed by ACE et al. about the purpose and need statement and its effects on the range of alternatives by declaring that the purpose and need statement "provide[s] the flexibility for consideration of a large range of alternatives including roadway, non-roadway, and multimodal alternatives including expanded ferry and rail." E.g., id. at app. K (comment 295-19). Notwithstanding this declaration, the FHWA employs the purpose and need statement to eliminate all non-bridge alternatives from the EIS.4 Id. at § 2.8.</p>	<p>The comment asserts that the Purpose and Need Statement was drawn so narrowly that only a bridge across Knik Arm could meet it, and the Federal Highway Administration (FHWA) “abused its discretion by adopting” it. Further, the comment says that FHWA “employs the purpose and need statement to eliminate all non-bridge alternatives from the EIS.”</p> <p>The project’s Purpose and Need statement does not rely on meeting just one of the need objectives. Section 2.2.1 explains the P&N criteria that were used to determine whether alternatives met the purpose and need objectives, which are discussed in detail in Section 1.0.</p> <p>The project’s purpose and need statement was defined broadly enough to allow consideration of non-bridge alternatives, and non-bridge alternatives such as ferry, tunnel and rail were considered. The Purpose and Need statement led to nine different, interrelated elements or criteria based on key purpose and need objectives. The screening criteria were developed in accordance with Council on Environmental Quality (CEQ) guidelines for determining reasonable alternatives--those that are practical or feasible from a technical and economic standpoint -- and in consultation with an Interdisciplinary Team (IDT). The IDT was established specifically for environmental resource and regulatory agencies, and local governmental officials. Many IDT meetings were held and were open to representatives of agencies, local governments, and the military having either a direct interest in or applicable jurisdiction over some aspect of the proposed project. A list of the IDT meetings can be found in the <i>Scoping Summary Report: Comments, Issues, and Alternatives</i> (FHWA, 2005). The alternative screening criteria were shared in these meetings with general concurrence from participating agencies.</p> <p>The following criteria were used to evaluate reasonableness with respect to purpose and need for the alternatives:</p> <ul style="list-style-type: none">• Criterion P&N-1. Would further development of transportation systems in the Upper Cook Inlet region by providing improved vehicular access and surface transportation connectivity between Anchorage and the Mat-Su at the Port MacKenzie District• Criterion P&N-2. Would be financially feasible, based on the ability to finance a total estimated project cost not-to-exceed \$600 million (this criterion is for initial construction costs of the facility, Phase 1, and does not include ultimate build-out capacity that would be funded through toll-backed financing)• Criterion P&N-3. Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs• Criterion P&N-4. Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered• Criterion P&N-5. Would further regional transportation infrastructure to meet existing and projected population growth• Criterion P&N-6. Would further regional transportation infrastructure in response to locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in Alaska Statutes chapter 19.75• Criterion P&N-7. Would further regional transportation connectivity for the movement of people to and from—and distribution between—Anchorage, the Mat-Su, and Interior Alaska• Criterion P&N-8. Would further regional transportation connectivity for the movement of freight and goods to and from—and distribution between—Anchorage, the Mat-Su, and Interior Alaska• Criterion P&N-9. Would improve safety and provide transportation system redundancy for alternative travel routing and access for emergency response and evacuation <p>The crafting of the purpose and need is within sound discretion of FHWA and its partners. The project’s purpose and need statement was defined broadly enough to allow consideration of non-bridge alternatives, and non-bridge alternatives such as ferry tunnel and rail were considered.</p>
327	3	Massey	Trustees for Alaska	<p>The FHWA eliminates various alternatives under Criterion P&N-2 while failing to adequately consider whether the proposed bridge meets this criterion. Specifically, the EIS eliminates various alternatives that would cost over \$600 million, but approves an 8,200-foot bridge over Knik Arm because it would cost under \$600 million. FHWA, EIS at tbl. 2-7, tbl. 2-9. The approval of the bridge under this criterion contradicts various studies the FHWA omits from the EIS. For example, the FHWA omits its own study indicating the bridge would cost \$639 million. FHWA et al., Cost Estimate Review Study 4-5 (June 2006). Additionally, the FHWA omits the contemporaneous KABATA financial plan showing that the "initial construction costs" of the bridge would be \$587 million in addition to \$45 million for "development phase activities," for a total of \$632 million, and that "total estimated project cost" -- with debt service, bond issuance, and other transaction costs --would be \$845 million. KABATA, TIFIA Application § D at 2 (June 2007). The failure of the FHWA to disclose and consider all information about the costs of the proposed bridge in applying Criterion P&N-2 is arbitrary and capricious and violates NEPA. E.g., 40 C.F.R. §§ 1502.14, 1502.24; <i>Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.</i>, 463 U.S. 29, 43 (1983).</p>	<p>The comment states that the Federal Highway Administration (FHWA) eliminated “various alternatives under Criterion P&N-2 while failing to consider adequately whether the proposed bridge meets this criterion.” The comment concludes by saying “[t]he failure of the FHWA to disclose and consider all information about the costs of the proposed bridge in applying Criterion P&N-2 is arbitrary and capricious and violates NEPA.”</p> <p>The Council on Environmental Quality (CEQ) defines reasonable alternatives as those “that are practical or feasible from the technical and economic standpoint and those using common sense” (CEQ 1986). During the formal scoping phase of the Environmental Impact Statement (EIS), rough order of magnitude (ROM) construction cost estimates were prepared as a basis for preliminary corridor and corridor variant evaluations (see <i>Final Environmental Impact Statement (Final EIS)</i> Chapter 2). The \$600 million cost screening criterion was applied to each alternative. None of the alternatives were eliminated based solely on cost. After reasonable alternatives were identified, additional refinements to cost and impact evaluations were performed, including cost estimates for controlled access right-of-way (ROW), preliminary engineering, construction administration, mitigation, and contingencies. Due to the evolving process of alternatives development, early construction cost estimates prepared as part of the scoping process are not readily comparable to later phase comprehensive cost evaluations. As with any project, the cost along with the project’s</p>

					<p>financial feasibility will fluctuate over time. The latest traffic and revenue forecasts continue to show that the project is financially feasible. The project will proceed only if it is financially feasible including full funding of all mitigation measures required for the project.</p> <p>The FHWA 2006 cost estimate prepared after screening included "development phase activities," and it also analyzed a construction scenario that increased the scope of work in Phase I including a full build out of the cut-and-cover tunnel at Government Hill, ROW acquisition for Phase 2 and environmental mitigation costs. This approach would decrease the cost of Phase 2 by approximately \$82 million by advancing several construction items to Phase 1 but does not include the additional financing costs. As noted on the <i>Final EIS</i> Summary the project would be constructed over time to provide needed capacity as traffic volumes grow. The EIS fully discloses the environmental impacts of Phase 1 and 2 and describes the anticipated project elements in two phases. Phases 1 includes an initial minimum two-lane Crossing, a minimum 8,200-foot bridge structure and connecting roadway sections connecting to the A-C Couplet. Beyond that there are numerous construction scenarios based on constructability and project economics. For example elements from Phase 2 (e.g., initial four-lane construction of portions of the roadway or bridge or full construction of the tunnel under Government Hill) could occur as part of Phase1. Each of these scenarios would have its own funding requirements.</p> <p>The TIFIA application includes "development phase activities" costs (primarily NEPA and preliminary engineering) and financing related costs (reserves, prefunded interest and debt issuance related costs). These are not construction costs and would be applicable to any build alternative (and in the case of development related activities costs, to a no-action alternative as well). They are included in the TIFIA program's definition of Eligible Project Costs for purposes of determining maximum TIFIA loan participation.</p> <p>The 2006 cost estimate and TIFIA application included items and activities that were not part of the ROM screening estimates.</p> <p>FHWA continues to monitor projects costs and conducted a cost estimate review in 2009 (<i>Knik Arm Crossing Cost Estimate Review</i>, FHWA, 2009). Total construction costs, including a 15 percent contingency, ranged from \$601 million to \$669 million with a 90 percent confidence level.</p>
327	4	Massey	Trustees for Alaska	<p>Second, the FHWA applies many of the criteria without defining essential terms and without credible methodology. For example, under Criterion P&N-3, the FHWA imposes a higher standard on non-bridge alternatives than bridge alternatives. Specifically, the Scoping Summary Report and the EIS indicate that the ferry alternative -- and, as a result, the multimodal alternative -- is not "sustainable" because its revenue would not cover operation and maintenance, overhaul and maintenance, administrative, insurance, capital, and other costs of the ferry five years after start-up. FHWA, Scoping Summary Report at 6-40. In contrast, the FHWA finds that the bridge alternatives are "sustainable" because they cover operation and maintenance costs in the year 2030. Id. at § 6.8.3. Moreover, the EIS defines "efficient" in Criterion P&N-4 as "a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered." FHWA, EIS at § 2.2.1. Rather than systematically apply the factors in this definition, the FHWA simply eliminates alternatives that would take longer to cross Knik Arm than a Knik Arm bridge. FHWA, Scoping Summary Report at § 6.8.1; FHWA, EIS at § 2.5.2. In short, the FHWA applies the purpose and need criteria inconsistently and incredibly to the alternatives, which is arbitrary and capricious and violates NEPA. E.g., 40 C.F.R. §§ 1502.14, 1502.24; Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983).</p>	<p>The comment expresses the following concern: "the Federal Highway Administration (FHWA) applies many of the criteria without defining essential terms and without credible methodology."</p> <p>The National Environmental Policy Act (NEPA) and its implementing Council on Environmental Quality (CEQ) regulations 40 C.F.R. Part 1500 and FHWA regulations 23 C.F.R. Part 771 govern this project's environmental impact statement and the range of reasonable alternatives to be considered, as well as the purpose and need for the project. FHWA) established a screening and review process that incorporated evaluating corridors against the purpose and need for the project. The proposed methodology, screening criteria, and purpose and need were shared with agencies and the public at numerous scoping meetings.</p> <p>The Purpose and Need statement led to nine different, interrelated elements or criteria based on key purpose and need objectives (P&N criteria). The screening criteria were developed in accordance with CEQ guidelines for determining reasonable alternatives--those that are practical or feasible from a technical and economic standpoint, and using common sense—and in consultation with an Interdisciplinary Team (IDT). The IDT was established specifically for environmental resource and regulatory agencies, and local governmental officials. Many IDT meetings were held and were open to representatives of agencies, local governments, and the military having either a direct interest in or applicable jurisdiction over some aspect of the proposed project. Development of the alternative screening criteria was shared in these meetings with general concurrence from participating agencies. The terms and methodology are, as the comment points out, given in the <i>Scoping Summary Report: Comments, Issues, and Alternatives</i> (FHWA, 2005).</p> <p>The comment further expresses the concern that "under Criterion P&N-3, the FHWA imposes a higher standard on non-bridge alternatives than bridge alternatives."</p> <p>Criterion P&N-3. Would be sustainable; projected travel demand would provide estimated debt service and cover operation and maintenance costs.</p> <p>A higher standard was not applied to all nonbridge alternatives. Alternatives such as a ferry, tunnel, and rail were considered and screened with the same criteria as all other alternatives. The fact that they did not meet the purpose and need identified by the state left FHWA with bridge and No-Action alternatives. For example, the rail alternative was not self-supporting as is the Crossing.</p> <p>Regarding criterion P&N-4, this comment goes further saying "[r]ather than systematically apply the factors in this definition, the FHWA simply eliminates alternatives that would take longer to cross Knik Arm than a Knik Arm bridge."</p> <p>Criterion P&N-4. Would be efficient; defined as a measure of traffic operating conditions that occur when such factors as travel demand, effects on connecting transportation networks, facility length, travel time, and operating speed are collectively considered.</p> <p>Travel time was considered for all alternatives and they were screened for efficiency. Alternatives were eliminated for their lack of efficiency among other screening criteria.</p> <p>KABATA was charged by the Alaska Legislature (AS § 19.75.011.) to build a bridge across Knik Arm. FHWA has the responsibility to evaluate proposed projects in accordance with NEPA. It does not, however, have planning authority,</p>

					<p>which is reserved to the states and local governments. The State of Alaska identified a need, and proposed a solution to FHWA. FHWA expanded to study to the broadest parameters within keeping in its role.</p> <p>The heart of this comment appears to be that “FHWA applies the purpose and need criteria inconsistently and incredibly to the alternatives, which is arbitrary and capricious and violates NEPA.”</p> <p>The FHWA Environmental Impact Statement (EIS) process is objective and highly regulated to ensure that the final decisions on the project are made in the best overall public interest. Each stage of the process must receive approval before the next stage is undertaken. This project development sequence is not arbitrary and capricious, as it precisely follows the NEPA, providing the level of detail that is germane at each stage. <i>Final Environmental Impact Statement (Final EIS)</i> was carefully and thoughtfully prepared in accordance with NEPA and FHWA regulations, and it is in compliance with the letter and spirit of the law.</p> <p>All alternatives were subject to the same process (methodology) and against the same criteria, the nine P&N criteria and eight technical criteria. In Level 1 Screening, five different transportation modes were evaluated. In Level 2 Screening, three types of bridges. Two types of tunnels, and a tidal dam were evaluated. In Level 3 Screening, eleven corridors and five variants were evaluated. Alternatives that did not meet the screening criteria were eliminated from further consideration (see Section 2.5 of the <i>Final EIS</i> for details). Based on this screening, five reasonable alternatives were carried forward for evaluation in the <i>Final EIS</i>. As noted above, multimodal alternatives, including improved rail service, were evaluated in the <i>Final EIS</i>, and although complementary to the proposed project, were found not to be reasonable alternatives based on the purpose and need for this project, including their abilities to be self-sustaining and operate efficiently. See Section 2.5 of the <i>Final EIS</i>.</p> <p>After screening, all reasonable alternatives under consideration (including the No-Action Alternative) were developed to a comparable level of detail in the <i>Final EIS</i>. The No-Action Alternative and four build alternatives were evaluated in detail.</p>
327	5	Massey	Trustees for Alaska	<p>Third, the FHWA eliminates non-bridge alternatives under Criterion P&N-5 based on their inability to meet "population growth" that would occur only if KABATA builds the bridge. The FHWA estimates that a bridge would "generate about 45,900 trips per day" in the year 2039. FHWA, Scoping Summary Report at 6-41; FHWA, EIS at § 2.5.2. While the FHWA never reveals the source of this estimate, a report prepared at the time of the Scoping Summary Report - but left out of the report and the EIS - projects a similar number of trips across the bridge. See Wilbur Smith Associates, Knik Arm Bridge Preliminary Traffic and Toll Revenue Study tbl. 2 (Nov. 2005) (estimating 42,000 daily trips across a Knik Arm bridge in 2039). More importantly, the report projects only 6,100 trips across Knik Arm in 2039 if KABATA does not build the bridge. Id. at tbl. 3. In other words, the demand estimates for the proposed Knik Arm bridge are inapplicable to the non-bridge alternatives because they project demand many times higher than the non-bridge alternatives would have to accommodate. The FHWA ignores this problem, however, and applies the higher bridge demand to eliminate three of the four non-bridge alternatives. FHWA, Scoping Summary Report at § 6.8.1; FHWA, EIS at tbl. 2-7, § 2.5.2. The FHWA has thus failed to articulate a "rational connection between the facts found and the conclusions made" in violation of NEPA. E.g., <i>Midwater Trawlers Co-op v. U.S. Dep't of Commerce</i>, 282 F.3d 710, 716 (9th Cir. 2002).</p>	<p>This comment states that “the FHWA eliminates non-bridge alternatives under Criterion P&N-5 based on their inability to meet ‘population growth’ that would occur only if KABATA builds the bridge.”</p> <p>The comment continues “the demand estimates for the proposed Knik Arm bridge are inapplicable to the non-bridge alternatives because they project demand many times higher than the non-bridge alternatives would have to accommodate. The Federal Highway Administration (FHWA) ignores this problem and applies the higher bridge demand to eliminate three of the four non-bridge alternatives.”</p> <p>The specific mission of KABATA, as defined by Alaska Statutes (AS), Title 19, Chapter 75, is to:</p> <p style="padding-left: 40px;">develop, stimulate, and advance the economic welfare of the state and further the development of public transportation systems in the vicinity of the Upper Cook Inlet with construction of a bridge to span Knik Arm and connect the Municipality of Anchorage (MOA) and the Matanuska-Susitna Borough (Mat-Su Borough).</p> <p>The Purpose and Need statement led to nine different, interrelated elements or criteria based on key purpose and need objectives. The screening criteria were developed in accordance with Council on Environmental Quality (CEQ) guidelines for determining reasonable alternatives--those that are practical or feasible from a technical and economic standpoint, and using common sense—and in consultation with an Interdisciplinary Team (IDT). The Purpose and Need of the project is multi-faceted and is not satisfied by just one of the need objectives. The <i>Final Environmental Impact Statement (Final EIS)</i> Section 2.2.1 explains the P&N criteria that were used to determine whether alternatives met the purpose and need objectives, which are discussed in detail in <i>Final EIS</i> Section 1.0. The P&N criteria were used to ensure that reasonable alternatives were developed to meet the purpose of and need objectives for the proposed project.</p> <p>Screening Criterion P&N-5 considered whether an alternative could meet existing and projected population growth: “Criterion P&N-5. Would further regional transportation infrastructure to meet existing and projected population growth.”</p> <p>The <i>Final EIS</i> (Section 1.1, and <i>Knik Arm Crossing Land Use and Transportation Implementation Plan</i> [KABATA, 2005]) analyzed existing and projected population growth. These projections show that the population will grow with or without the KAC. Alternatives were screened to meet projected population growth, not modal capacity.</p> <p>P&N -6, 7, and 8 are equally important to non-road alternatives being able to meet the purpose and need:</p> <ul style="list-style-type: none">• Criterion P&N-6. Would further regional transportation infrastructure in response to locally adopted economic development, land use, and transportation plans, and as directed by the Alaska State Legislature in AS 19.75.• Criterion P&N-7. Would further regional transportation connectivity for the movement of people to, from, and distribution between Anchorage, the Mat-Su, and Interior Alaska• Criterion P&N-8. Would further regional transportation connectivity for the movement of freight and goods to, from, and distribution between Anchorage, the Mat-Su, and Interior Alaska <p>Alternatives without a high travel demand capacity would not be able to meet P&N-6, 7, or 8.</p> <p>The comment continues: “[t]he FHWA has thus failed to articulate a "rational connection between the facts found and the conclusions made" in violation of NEPA.”</p>

					<p>To ensure that a “rational connection between the facts found and the conclusions made” would be possible, as part of the <i>Final EIS</i>, the FHWA developed a more rigorous project demand forecast that would be consistent with the local planning and modeling efforts on each side of the project—the Mat-Su and Anchorage.</p> <p>The methodology for the project’s land use and population forecast was based on the Land Use Impacts of Transportation: A Guidebook. (National Cooperative Highway Research Program, Transportation Research Board, Parsons Brinckerhoff Quade & Douglas, Inc. October 1998.). The methodology used to develop the forecast was fully documented in the <i>Knik Arm Crossing Land Use and Transportation Implementation Plan</i> (KABATA, 2005), which was shared with the MOA, Anchorage Metropolitan Area Transportation Solutions (AMATS) DEC, the Environmental Protection Agency (EPA) and others before embarking upon the forecasting. FHWA went to great lengths to prepare its forecast openly with continuous review and input from key agencies through the “Economic Working Group” and Interdisciplinary Team meetings.</p> <p>KABATA engaged Wilbur Smith Associates (WSA), an independent traffic and revenue consulting firm, to perform traffic and toll revenue studies for the Knik Arm Crossing. WSA used the Anchorage Land Use Allocation and Trans-Cad traffic models along with the Mat-Su Borough’s traffic model for travel forecasting. The results of both the WSA Preliminary and Intermediate Traffic and Toll Revenue Studies indicate forecasted traffic volumes are sufficient to support operations and maintenance of the proposed facility, service project debt incurred to finance the construction, fund future expansion obligations, and provide a return opportunity for equity investors in the proposed project. Importantly, WSA determined that traffic demand for using the Knik Arm Crossing is projected to be highly inelastic, further supporting the sufficiency of toll revenue. WSA also conservatively estimated facility operations and maintenance costs and toll collection costs over the first thirty years of operations for purposes of modeling cash flows.</p>
327	6	Massey	Trustees for Alaska	<p>Fourth, the EIS provides no basis for Criterion P&N-9. Criterion P&N-9 requires the alternatives to "improve safety and provide transportation system redundancy for alternative travel routing and access for emergency response and evacuation." FHWA, EIS at 2-3. The footnote to this criterion provides - without support - that "[i]n the event of a natural disaster or accident, overland connections within and access to the region’s airports, ports, hospitals, and other emergency services would be severely limited." Id. As the comments on the draft EIS by ACE et al. indicate,</p> <p>"the FHWA fails to demonstrate any shortcomings in the present or future capacity of the regional transportation system to handle ‘[s]afety’ or ‘emergency response and evacuation’ needs now or in the future, choosing instead to speculate about hypothetical shortcomings in the capacity of the system to handle hypothetical future disasters."</p> <p>The FHWA has not corrected this failure in the EIS. Consequently, Criterion P&N-9 is not a reasonable basis to eliminate non-bridge alternatives, as the FHWA does in the EIS. Id. at tbl. 2-7; Westlands, 376 F.3d at 866 ("Courts evaluate a Statement of Purpose and Need under a reasonableness standard.") (citing Friends of Southeast’s Future v. Morrison, 153 F.3d 1059, 1066-67 (9th Cir.1998)); Midwater Trawlers Co-op, 282 F.3d at 716.</p>	<p>The comment states that P&N-9 is not a reasonable criterion for evaluating alternatives and determining what alternatives are reasonable because the <i>Final Environmental Impact Statement (Final EIS)</i> has not demonstrated or factually identified any shortcomings/needs in the present or future capacity of the regional transportation system to handle ‘[s]afety’ or ‘emergency response and evacuation’ needs now or in the future, choosing instead to speculate about hypothetical shortcomings in the capacity of the system to handle hypothetical future disasters.</p> <p>The Purpose and Need statement is multi-faceted and does not rely on meeting just one of the need objectives. Section 2.2.1 explains the P&N criteria that were used to determine whether alternatives met the purpose and need objectives, which are discussed in detail in Section 1.0. The criterion questioned by this comment is:</p> <p>Criterion P&N-9. Would improve safety and provide transportation system redundancy for alternative travel routing and access for emergency response and evacuation</p> <p>Currently, the only north-south ingress and egress route between Anchorage, the Mat-Su, and Interior Alaska is the Glenn-Seward Highway Corridor. The Glenn Highway was closed 14 times in 2008 for problems involving safety, security, emergencies, and accidents. A catastrophic natural event or single incident along the Glenn Highway could halt traffic for long periods of time. Even now, relatively minor automobile accidents on the Glenn Highway cause extended delays, lane closures, and loss of service. On the Glenn Highway between the stoplight at Bragaw Street in Anchorage and the Palmer-Wasilla Interchange in the Mat-Su Borough, for the ten-year period from 1994 to 2003, there were 3,686 auto accidents, involving 5,499 vehicles, causing 31 fatalities, 193 major injuries, and 1,658 minor injuries. This averages one accident per day, resulting in a minor injury once every two days, and a death or major injury every 2.3 weeks. Redundant access would help to relieve this problem by providing an alternate travel route between Anchorage and the Mat-Su Borough, and would support a more reliable emergency response system in the region.</p> <p>Emergency response times between the Mat-Su Borough and Anchorage would be greatly reduced, in some cases from an hour and a half to one half hour with a Knik Arm Crossing. In the event of a disaster, interruption of the Glenn Highway corridor would leave Anchorage (and communities south of Anchorage on the Kenai Peninsula), and the Mat-Su Borough to the north without an overland route for emergency response or evacuation between the two areas. The Anchorage population, combined with the Mat-Su Core Area population, totals approximately 350,000 people and, by 2030, is projected to be approximately 550,000. The sole northern arterial connection—provided by the Glenn Highway—coupled with the growing Mat-Su commuter base relying on this single transportation link, presents a highly vulnerable regional transportation system, particularly in light of growth projections. The ability of multimodal alternatives to evacuate high numbers of people was evaluated in the <i>Final EIS</i> and by an independent consultant; only the ferry would be considered redundant. Although multimodal alternatives are complementary to the proposed project, they were found not to be reasonable alternatives based on the purpose and need for this project.</p> <p>The Recommended Alternative will provide a second, alternative travel route to support timely fire, police, disaster relief services, emergency response, and evacuation. The Recommended Alternative also will provide a needed second, alternative connection between regional airports, ports, and hospitals. See Sections 2.1 and 2.2 regarding the alternatives development and screening criteria. Also, see Section 2.5 of the <i>Final EIS</i> and the technical report entitled <i>Land Use and Transportation Forecast</i> (KABATA, 2006) for more detail about shortcomings in the present transportation system and future capacity of the transportation system.</p>
327	7	Massey	Trustees for Alaska	<p>These examples are not meant to identify all of the problems with the purpose and need statement and range of alternatives in the EIS. Instead, they typify the problems with the EIS. It is axiomatic that NEPA requires the FHWA to demonstrate a "rational connection between the facts found and the conclusions made." E.g., Midwater Trawlers Co-op, 282 F.3d at 716.</p> <p>Federal courts will scrutinize purpose and need statements to determine whether they articulate legitimate needs and provide for a</p>	<p>The comment asserts that “If a purpose and need statement, alternatives screening process, or range of alternatives fails to provide a rational connection between the facts found and conclusions made, or otherwise eliminates or omits reasonable alternatives, the EIS violates NEPA. ... This EIS has precisely these problems, and we thus urge the FHWA to select the No Action Alternative.”</p>

				<p>reasonable range of alternatives. E.g., Citizens Against Burlington, 938 F.2d at 196; City of Carmel-by-the-Sea, 123 F.3d at 1155; Westlands, 376 F.3d at 866. Federal courts will also scrutinize the alternatives screening process and the resulting range of alternatives. E.g., California v. Block, 690 F.2d 753, 766 (9th Cir. 1982); Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 813-15 (9th Cir. 1999); Idaho Conservation League v. Mumma, 956 F.2d 1508, 1519-20 (9th Cir. 1992); Methow Valley Citizens Council v. Reg'l Forester, 833 F.2d 810, 815-16 (9th Cir. 1987), rev'd on other grounds, Robertson v. Methow Valley Citizens Council, 490 U.S. 332 (1989).</p> <p>If a purpose and need statement, alternatives screening process, or range of alternatives fails to provide a rational connection between the facts found and conclusions made, or otherwise eliminates or omits reasonable alternatives, the EIS violates NEPA. E.g., Idaho Conservation League, 956 F.2d at 1519-20. This EIS has precisely these problems, and we thus urge the FHWA to select the No Action Alternative.</p>	<p>The National Environmental Policy Act (NEPA) and its implementing Council on Environmental Quality (CEQ) regulations 40 C.F.R. Part 1500 and Federal Highway Administration (FHWA) regulations 23 C.F.R. Part 771 govern this project's environmental impact statement and the consideration of the range of reasonable alternatives to be considered as well as the purpose and need of the project. As part of the NEPA process, scoping activities for the proposed Knik Arm Crossing project took place during a nine-month period. More than 1,000 comments were received and a wide variety of outreach tools were used in the development of purpose and need, the screening criteria, identification of alternatives, and the identification of issues by the public and agencies. This process is presented in Sections 2.2 of the <i>Final Environmental Impact Statement (Final EIS)</i> and in the <i>Scoping Summary Report: Comments, Issues, and Alternatives</i> (FHWA, 2005). This extensive scoping process was established to allow the proposed project to respond to and evolve as a result of input from the public, local governments, agencies, and Tribes.</p> <p>The <i>Final EIS</i> was carefully and thoughtfully prepared in accordance with NEPA and FHWA regulations. Consistent with NEPA, a full range of alternatives to address the purpose of and need for the KAC Project were identified and evaluated. These alternatives were screened using nine purpose and need criteria and eight technical criteria, which were developed as described above, to determine reasonable alternatives for detailed evaluation in the EIS. The purpose and need for the action; reasonable alternatives; and the direct, indirect, and cumulative impacts on the environment (including the social, economic, cultural and recreational, historic, physical, and natural environments) were weighed, considered, and balanced in deliberations of providing safe and efficient transportation and the benefits of the proposed action. FHWA continues to work with the agencies and the public to avoid, minimize, or mitigate potential impacts of the KAC Project.</p>
327	8	Massey	Trustees for Alaska	<p>We further urge the FHWA to select the No Action Alternative because, as a policy matter as well as a NEPA matter, there is no need for the bridge. The EIS incorrectly depicts the boundary at which people would save travel time to Anchorage - the metric the FHWA adopts to measure the benefits of the bridge - so as to suggest that most of Wasilla would save time traveling to Anchorage by using the bridge. Compare FHWA, EIS at 3-1, fig. 3.1, with KABATA, Land Use and Transportation Forecasting Technical Report 6 (Feb. 2006). [footnote: We also note that the FHWA erroneously depicts the recommended alternative as connecting to Ingra-Gambell, FHWA, EIS at fig. 2.39, despite the fact that neither KABATA nor the FHWA commit to providing this connection.] This contradicts the information in the Land Use and Transportation Forecasting Technical Report, which indicates the bridge would reduce travel time to Anchorage only for people south and west of Wasilla. KABATA, Land Use and Transportation Forecasting Technical Report at 6; FHWA, EIS at app. K (comment number 295-23). Since only 20% of people in the Upper Cook Inlet region would live in this area in 2030 if the bridge is not built, the bridge would not reduce travel time to Anchorage for 80% of the people in the region. See FHWA, EIS at tbl. 4-1 (projecting that 549,200 people will live in the Upper Cook Inlet region in 2030, with 111,400 of them in areas that would experience reduced travel times to Anchorage - the Southwest Mat-Su Borough, West Mat-Su Borough, Houston, and outside the "modeled Mat-Su area"). [footnote: This population estimate is based on a population estimate for the Mat-Su Borough of 187,500. FHWA, EIS at tbl. 4-1. The EIS does not discuss, reference, or otherwise address the lower estimate of 137,682 provided by the Alaska Department of Labor and Workforce Development in October 2007 - two months before the FHWA issued the EIS. Eddie Hunsinger, Alaska Dep't of Labor, Population Projections, 2007 to 2030 10 (Oct. 2007). This is arbitrary and violates NEPA. E.g., 40 C.F.R. § 1502.24.]</p>	<p>The comment questions the travel boundary used for transportation modeling and the population projections used in the <i>Final Environmental Impact Statement (Final EIS)</i>.</p> <p>Federal Highway Administration (FHWA) analyzed travel times with the project traffic model. With the Crossing, a dividing line of equal travel times is formed from the southeast to northwest, south of Wasilla. Along this line, travel time to and from Anchorage would be approximately equal using either the Crossing or the existing Parks-Glenn Highway routes. Anyone living southwest of this line will see improvements in their travel time. See Sections 3.2.2 and 4.2.2 of the EIS, and the technical report entitled <i>Land Use and Transportation Forecast Technical Report</i> (KABATA, 2006). Analysis also shows that traffic on the Glenn Highway and the core area of the Borough would be reduced as growth patterns shift toward Point MacKenzie. The reduction in traffic growth would have a beneficial effect on commuters in those areas.</p> <p>Population projections were provided by the Alaska Department of Labor and were based on current populations and historical trends. Projections in the EIS followed a methodology that was developed using the Institute of Social and Economic Research (ISER) MAP Econometric Modeling System. This modeling system combines an economic module, a demographic module, a fiscal module, and a regionalization module.</p> <p>The comment questions the commitment of KABATA or FHWA to provide a connection to the Ingra-Gambell Couplet (Phase 2 of the KAC Project). A connection to the Ingra-Gambell Couplet is a commitment of the project in the EIS and would be constructed with project funds when traffic demand warrants.</p>
327	9	Massey	Trustees for Alaska	<p>Additionally, the bridge would neither alleviate traffic nor spur economic development in the region; according to the EIS, average travel time ("VHT") and distance ("VMT") would increase if KABATA builds the bridge, FHWA, EIS at tbl. 4-4, and total regional employment would be the same with or without the bridge, id. at tbl. 4-24. In short, the Knik Arm bridge is a costly and ineffectual solution to a non-existent problem.</p>	<p>The comment states that "the bridge would neither alleviate traffic nor spur economic development in the region ..."</p> <p>The purpose and need in the <i>Final Environmental Impact Statement (Final EIS)</i> details the long history of state and locally adopted economic, port, land use, transportation, and comprehensive plans that identify the need for the KAC Project. See Section 1 of the <i>Final EIS</i>.</p> <p>The comment further states that "average travel time ("VHT") and distance ("VMT") would increase if KABATA builds the bridge, ... and total regional employment would be the same with or without the bridge ..."</p> <p>Traffic modeling developed for the project shows that the project also will ease the commuter traffic from the Mat-Su Valley to Anchorage. Section 4.2.2 discusses changes in travel within the region. It is anticipated that many roads in the region will have less traffic congestion and fewer vehicle delays. Areas affected by these reductions include the Glenn Highway just south of the Glenn Parks Interchange, the Palmer/Wasilla Highway, and the Glenn Highway between Anchorage and Eagle River. Further, according to the <i>Land Use and Transportation Technical Report</i> (KABATA, 2006), Appendix I, Attachment 7, the amount of traffic reduction is anticipated to be 9,600 to 10,000 vehicles per day on the Glenn Highway east of Muldoon; or approximately a 10 percent reduction.</p> <p>The Federal Highway Administration (FHWA) analyzed travel times with the project traffic model showed that with the Crossing, a dividing line of equal travel times is formed from the southeast to northwest, south of Wasilla. Along this line, travel time to and from Anchorage would be approximately equal using either the Crossing or the existing Parks-Glenn Highway routes. Anyone living southwest of this line will see improvements in travel time. The cost and amount of gas consumption, the amount of exhaust put into the air, the cost of insurance based on miles traveled, wear and tear on vehicles, and maintenance costs would be reduced.</p> <p>The project affects where jobs and population will be located based on economic advantages and disadvantages in the land market. To that extent, the bridge creates economic efficiencies for certain economic sectors (like warehousing, transportation services, industrial land uses) and residential population growth, which will provide major economic and social benefits that are described in the purpose and need.</p> <p>The comment closes by saying "the Knik Arm bridge is a costly and ineffectual solution to a non-existent problem."</p>

					Improving regional connectivity for moving people, freight, and goods is an important need to be met by this project. Under the Recommended Alternative, the bridge crossing and connecting roadways will provide a second high-capacity means of transportation connection between Anchorage, the Mat-Su, and Interior Alaska. The Recommended Alternative will provide 24-hour, 7 days-per week, unlimited access for both passenger vehicle and freight transport. The Crossing would lower the cost of freight to interior Alaska; it would also lower the cost for passenger vehicles and provide an alternative to the Glenn Highway for safety, security, emergencies and accidents. The Crossing would also connect the Port of Anchorage and Port MacKenzie, to better serve the state and support economic development.
327	10	Massey	Trustees for Alaska	<p>Faced with these facts, the FHWA resorts to "state and locally adopted economic, port, land use, transportation, and comprehensive plans" and AS 19.75 to support the claimed need for the bridge. E.g., id. at app. K (comment 295-21). In its comments on the draft EIS, the Municipality of Anchorage aptly questions this strategy:</p> <p>"The [Municipality] believes the citations [to state and local plans that purportedly support a Knik Arm bridge] are selective and do not always convey the full context of the referenced works. . . . [S]everal different plans for the Port of Anchorage are cited, but not in their chronological sequence nor in recognition of evolving knowledge and conditions over time. . . . Several other references on page 1-11 cite actions indicating support for a Knik Arm crossing study. It could be noted that these were largely responsive to KABATA prompting. [The Municipality] believes the Draft EIS language is biased toward favorable findings, and not altogether objective. We believe that is inappropriate, especially so for large-scale public investment decisions of this magnitude."</p> <p>Municipality of Anchorage, Comments on the Knik Arm Crossing Draft EIS 19-20 (Nov. 17, 2006). We agree that the cited plans and AS 19.75 are not a credible basis for the Knik Arm bridge. We thus urge the FHWA to select the No Action Alternative.</p>	<p>The comment suggests that "cited plans and AS 19.75 are not a credible basis for the Knik Arm bridge."</p> <p>Sections 1.1 and 1.3 of the <i>Final Environmental Impact Statement (Final EIS)</i> detail the long history of state and locally adopted economic, port, land use, transportation, and comprehensive plans that identify the need for the Knik Arm Crossing project.</p>
327	11	Massey	Trustees for Alaska	<p>The FHWA Has Not Adequately Assessed or Disclosed All Reasonably Foreseeable Direct, Indirect, and Cumulative Impacts.</p> <p>Like the draft EIS, the EIS fails to fully and fairly disclose the significant environmental impacts of the proposed bridge. The FHWA ignores many of the comments submitted by ACE et al. regarding the inadequate disclosure of impacts in the draft EIS. Even the resulting disclosure in the EIS, however, shows that a bridge would significantly degrade water quality and marine and terrestrial fish and wildlife habitat, leading to long-term and widespread negative impacts to fish populations, wildlife populations, and the environment generally. E.g., id at 4-185, 4-198 to 4-199, 4-201, 4-215, 4-227, 4-230, 4-243, 4-244, 4-248, 4-255, 4-259 to 4-260, 4-301, 4-309, 4-310, 4-312, 4-315 to 4-316, 4-320, and 4-322. Among the remaining questions, however, is how the bridge would reduce air pollution, as the FHWA claims on page 4-129 of the EIS, when table 4-4 of the EIS indicates the bridge would increase average travel time and distance. Moreover, the FHWA indicates that impacts to terrestrial mammal populations are "not known" id. at 4-261, while in another section it indicates the impacts could be "substantial," id. at 4-322, and in yet a third section it indicates the bridge "would not contribute to long-term adverse cumulative effects on the regional diversity of terrestrial habitats or wildlife populations," id. at 4-312. The EIS contains incomplete, unsupported, and contradictory discussions of environmental impacts that leave decision makers and the public uninformed and confused about the impacts of the bridge and demonstrate that the EIS does not adequately disclose the reasonably foreseeable environmental impacts of this project, in violation of NEPA. E.g., 40 C.F.R. § 1502.1.</p> <p>We support the comments on the draft EIS by various federal agencies that ask the FHWA to add to the EIS the discussions of impacts found in various reports, appendices, and other documents referenced in the EIS. These agencies include the U.S Army Corps of Engineers ("Corps"), the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the U.S. Marine Mammal Commission, and the National Oceanic and Atmospheric Administration ("NOAA"). Id. at app. K. They conclude that the EIS does not adequately discuss, among other things, the impacts of the bridge on wildlife habitat and populations, and the means by which direct, indirect, and cumulative impacts on these and other resources would occur. Id. The FHWA largely ignores their critiques, id., and the EIS consequently leaves decision makers and the public without a reasonably thorough discussion of the impacts of the bridge, in violation of NEPA. E.g., Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 508 F.3d 508, 526-27 (9th Cir. 2007); Pac. Coast Fed'n of Fishermen's Ass'ns. v. Nat'l Marine Fisheries Serv., 482 F.Supp.2d 1248, 1255 (W.D. Wash. 2007).</p>	<p>The comment says that the Federal Highway Administration (FHWA) has not adequately assessed or disclosed all reasonably foreseeable direct, indirect, and cumulative impacts</p> <p>The purpose and need for the action; reasonable alternatives; and the direct, indirect, and cumulative impacts on the environment (including the social, economic, cultural and recreational, historic, physical, and natural environments) were weighed, considered, and balanced in deliberations of providing safe and efficient transportation and the benefits of the proposed action. The FHWA continues to work with the agencies and the public to avoid, minimize, or mitigate potential impacts of the KAC Project.</p> <p>The comment asks FHWA to "add to the EIS the discussions of impacts found in various reports, appendices, and other documents referenced in the EIS."</p> <p>The effects mentioned by the comment are discussed in more detail in numerous technical reports that were prepared in support of and referenced in the <i>Final Environmental Impact Statement (Final EIS)</i>. The Council on Environmental Quality (CEQ) directs that a <i>Final EIS</i> be concise, to provide a comprehensive summary of the proposed action, impacts to the natural and human environment, and measures for mitigating those impacts. The <i>Final EIS</i> is more than 1,000 pages, supported by more than 35 technical reports. These technical reports were made available to agencies and the public.</p> <p>The comment asks "how the bridge would reduce air pollution, as the FHWA claims on page 4-129 of the EIS, when table 4-4 of the EIS indicates the bridge would increase average travel time and distance."</p> <p>Analyses show that traffic on the Glenn Highway and the core area of the Borough would be reduced as growth patterns shift toward Point MacKenzie. The reduction in traffic growth in those areas would have a beneficial effect air quality in those areas and would cumulatively reduce the amount of gas consumption and the amount of exhaust put into the air. See Sections 3.2.2 and 4.2.2 of the <i>Final EIS</i>, and the technical report entitled <i>Land Use and Transportation Forecast Technical Report</i> (KABATA, 2006).</p> <p>The comment states that "disclosure in the EIS shows that a bridge would significantly degrade water quality and marine and terrestrial fish and wildlife habitat, leading to long-term and widespread negative impacts to fish populations, wildlife populations, and the environment generally." The comment later references impact discussions on pages 4-261, 4-312, and 4-322, saying they are "contains incomplete, unsupported, and contradictory discussions of environmental impacts"</p> <p>The discussions mentioned are in regard to two separate issues: indirect impacts and cumulative impacts. As defined on page 4-1 of the <i>Final EIS</i>, secondary, or indirect, impacts are those effects related to the project that are reasonably foreseeable, but occur later in time than do direct impacts. Cumulative impacts are those that "result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" (40 C.F.R. § 1508.7). The future actions are projects for which planning has progressed and implementation is reasonably foreseeable.</p> <p>The effects discussion cited on page 4-261 of the <i>Final EIS</i> is in regard to indirect impacts. As stated in the <i>Final EIS</i>, the development that is projected to occur under the Recommended Alternative would have both negative and positive indirect effects upon terrestrial mammal populations.</p> <p>The discussion of impacts on pages 4-312 and 4-322 of the <i>Final EIS</i> are in regard cumulative effects and involve two separate resources: terrestrial habitat (page 4-312) and terrestrial mammals (page 4-322). The project will have different cumulative effects upon each. To assess (quantify) potential terrestrial effects from development in the Mat-Su, PlanBuilder was used to quantify direct and indirect impacts from expected development shifts. It is a geographic information system (GIS) planning tool designed for land use and transportation scenario creation, evaluation, and</p>

					<p>ranking—quantification of effects. It facilitates testing different land use scenarios to gauge the effects of development on various land use, environmental, and transportation performance indicators. This software provided project-specific information useful in describing indirect land use impacts of increased growth. PlanBuilder results showed that the project will contribute to development of approximately 10,460 acres of now-undeveloped land in the Mat-Su. Most of this land will be developed for residential use. To demonstrate the magnitude of predicted development, approximately 4 percent of the study area (10,260 acres) is currently developed. If the project were not built, approximately 12 percent of the study area (29,360 acres) is expected to be developed; with implementation of the KAC Project, about 16 percent (39,830 acres) will develop. More than 204,000 acres of the study area (84 percent) will remain undeveloped even with implementation of the KAC Project. Thus, when analyzed in the context of all habitats within the study area and the remaining biodiversity, the project is not expected to have an adverse cumulative effect. This is a very high ratio of undeveloped land, which supports the continued health of the wildlife population.</p> <p>In regard to the terrestrial mammal discussion on page 4-322 of the <i>Final EIS</i>, as the <i>Final EIS</i> states, the KAC Project may contribute to a substantial cumulative effect. Although the potential cumulative effects on terrestrial habitat may not be substantial; the loss of habitat may contribute to a substantial cumulative effect upon terrestrial mammals. With or without the KAC Project, 86,730 acres (35.5 percent) of land in the study area will be protected from development, assuming that the Mat-Su wetland reserves, water body setbacks, and State Game Refuges remain managed as such.</p> <p>The comment says that the “EIS consequently leaves decision makers and the public without a reasonably thorough discussion of the impacts of the bridge, in violation of NEPA.” The FHWA EIS process is objective and highly regulated to ensure that the final decisions on the project are made in the best overall public interest. Each stage of the process must receive approval before the next stage is undertaken. All of the adverse impacts identified in the KAC <i>Final EIS</i>, including indirect and cumulative impacts, were weighed against the KAC Project’s beneficial impacts, particularly those related to meeting the purpose and need: improved regional transportation infrastructure to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans; improved regional transportation connectivity for the movement of people and the movement of freight and goods between the Mat-Su, Anchorage, and Interior Alaska; and improved safety and transportation system redundancy. The purpose and need for the action; reasonable alternatives; and the direct, indirect, and cumulative impacts on the environment (including the social, economic, cultural and recreational, historic, physical, and natural environments) were weighed, considered, and balanced in deliberations of providing safe and efficient transportation and the benefits of the proposed action. FHWA continues to work with the agencies and the public to avoid, minimize, or mitigate potential impacts of the KAC Project.</p>
327	12	Massey	Trustees for Alaska	<p>We further question the value and basis of the statement in the EIS that the bridge "would incur no damage and be immediately operational following the 100-year return period earthquake, and sustain significant but repairable damage following a major 1,000-year earthquake." FHWA, EIS at 4-139. The FHWA appears to draw this conclusion based in part on "an assumed peak ground acceleration of 0.36g." Id. Whatever the basis for this assumption, it falls below the levels (up to 0.8g) recorded in Kobe, Japan during the magnitude 6.8 earthquake that struck in 1995. It also falls below the 0.725g level the EIS states could be encountered in a 1,000-year earthquake. Id. Additionally, it presumably falls below the design levels for a 2,475-year earthquake that the Seismic Studies Technical Report, referenced in the EIS, urges KABATA to prepare the bridge to withstand:</p> <p>"Design measures should be taken to ensure ductile behavior in connections and major structural elements to prevent collapse under Maximum Considered Earthquake loads and efforts should be made to dissipate energy effectively whenever possible."</p> <p>KABATA, Seismic Studies Technical Report 15 (Feb. 2006). Since the bridge would be placed in a zone of high seismicity "capable of producing giant earthquakes of Magnitude 9+" of several minutes duration (which is longer than those contemplated by the American Association of State Highway and Transportation Officials on which the FHWA partly bases its ground acceleration assumption), id. at 9-11, the discussion of seismic impacts to the bridge does not provide the full and fair discussion of environmental impacts that NEPA requires. E.g., 40 C.F.R. § 1502.1.</p>	<p>Information in the <i>Final Environmental Impact Statement (Final EIS)</i> is based upon the best available data. Additional seismic analysis will be conducted during the design phase of the project.</p>
327	13	Massey	Trustees for Alaska	<p>We support the comments on the EIS submitted separately by the Government Hill Community Council concerning the lack of compliance on the part of the FHWA with the requirements of section 106 of the National Historic Preservation Act, 16 U.S.C. § 470s, and section 4(f) of the Department of Transportation Act of 1966, as amended, 23 U.S.C. § 138. Among the issues these comments identify, the Council has not been allowed to fulfill its role as consulting party in section 106 and section 4(f) negotiations and consultations. Furthermore, the Council identifies critical failures of the EIS, including the failure of the Erickson Variant to satisfy the purpose and need criteria in the EIS, and the failure of KABATA and FHWA to adequately evaluate a reasonable range of alternatives.</p>	<p>Comment noted. Please see responses to Government Hill Community Council.</p>
327	14	Massey	Trustees for Alaska	<p>We support the comments on the EIS by Defenders of Wildlife et al., the Marine Mammal Commission, and others that identify various shortcomings in the discussion of impacts to Cook Inlet beluga whales. Among the problems identified in these comments, the discussion of impacts to the beluga whale understates the challenges the whale faces and minimizes or ignores information indicating that the bridge may drive the whale population to extinction. E.g., NOAA, Comments on the Knik Arm Crossing Draft EIS 2 (Nov. 17, 2006). The EIS, as a result, violates NEPA by depriving decision makers and the public of a reasonably thorough discussion of the impacts of the bridge. E.g., Ctr. for Biological Diversity, 508 F.3d at 526-27.</p>	<p>Comment noted. Please see responses to Defenders of Wildlife comments, and responses to Marine Mammal Commission comments.</p>
327	15	Massey	Trustees for Alaska	<p>Lastly, we understand that the Corps is developing a hydrologic model of Knik Arm to address, among other things, the impacts of the bridge on siltation near the Port of Anchorage. This modeling should provide important information on the bridge and its effects on the Knik Arm ecosystem and related structures. Though we understand the FHWA believes its modeling provides an accurate assessment of the impacts of the proposed bridge, e.g., FHWA, EIS at app. K (comment 199-7), we urge the FHWA to withhold a Record of Decision on the proposed Knik Arm bridge until the Corps issues the results of this modeling.</p>	<p>Comment noted. Since the <i>Final Environmental Impact Statement (Final EIS)</i>, KABATA and FHWA have continued to work with U.S. Army Corps of Engineers (USACE) on the hydrologic model.</p>
327	16	Massey	Trustees for Alaska	<p>The Range of Alternatives in the EIS is Too Narrow for the Corps to Use as a Basis for Permitting the Bridge Under Section 404 of the Clean Water Act.</p> <p>The U.S. Army Corps of Engineers has repeatedly stated to the FHWA that the range of alternatives considered by the FHWA is too narrow for the Corps to use as a basis to decide whether to permit the bridge under section 404 of the Clean Water Act.</p>	<p>The comment states that “[t]he U.S. Army Corps of Engineers has repeatedly stated to the FHWA that the range of alternatives considered by the FHWA is too narrow for the Corps to use as a basis to decide whether to permit the bridge under section 404 of the Clean Water Act” and “The FHWA has not worked with the Corps...” to resolve permitting for the least environmentally damaging practicable alternative.</p> <p>An application for a Section 404 (b)(1) permit has not yet been submitted. The requirement for the evaluation of</p>

				<p>"Under the [Clean Water Act section 404] Guidelines a permit can only be issued for the least environmentally damaging practicable alternative, so long as that alternative does not have other significant adverse environmental consequences. At this point, the [preliminary draft EIS] contains insufficient information for us to determine Guidelines compliance and is inadequate with respect to our permit action." Corps, Comments on the Preliminary Draft EIS 1 (Apr. 28, 2006). See also 40 C.F.R. § 230.10(a).</p> <p>The FHWA has not worked with the Corps - a cooperating agency on the EIS - to resolve this problem. As a result, the Corps cannot rely on the EIS to permit the bridge under section 404 of the Clean Water Act. See <i>Sylvester v. U.S. Army Corps of Engineers</i>, 882 F.2d 407, 409 (9th Cir. 1989) ("Obviously, an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable. This court in Hintz quite properly suggested that the applicant's purpose must be 'legitimate.'").</p>	<p>alternatives under the Clean Water Act Section 404 (b)(1) is separate and distinct from those in NEPA. The Federal Highway Administration (FHWA) has evaluated an adequate range of alternatives in accordance with the purpose and need, and continues to work with the U.S. Army Corps of Engineers (USACE) during the permitting phase of the project.</p>
327	17	Massey	Trustees for Alaska	<p>The FHWA Violated the FAHA by Approving the Addition of the Knik Arm Bridge to the Anchorage Area Transportation Improvement Program.</p> <p>The FHWA unlawfully approved the addition of the Knik Arm bridge to the transportation plans of the Anchorage Metropolitan Area Transportation Solutions Policy Committee ("AMATS"). The Federal Aid Highway Act requires metropolitan planning organizations ("MPO") like AMATS to prepare long- and short-range transportation plans. 23 U.S.C. § 134(c)(1). When an MPO proposes to include a "major metropolitan transportation investment" in its plans, it must either prepare a "major investment study" ("MIS") or an EIS to consider the effects of and alternatives to the proposed project. 23 C.F.R. § 450.318(a), (i) (2006). Furthermore, when an MPO adopts or revises its transportation plans, the FHWA must certify that the MPO did so in compliance with the FAHA implementing regulations, including the MIS/EIS requirement. <i>Id.</i> at § 450.330(a).</p> <p>AMATS has never undertaken an MIS, nor did it have a final EIS when it added the Knik Arm bridge to its transportation plans on June 27, 2007. Nonetheless, the FHWA certified that AMATS revised these plans in compliance with the FAHA regulations. Letter from David C. Miller et al., FHWA, to Gordon Keith, AMATS, AMATS TIP Air Quality Conformity Determination 1 (June 29, 2007). This approval violates the FAHA and renders the addition of the Knik Arm bridge to the AMATS plans ineffective. 23 C.F.R. § 450.330(a). As a result, the bridge is not lawfully included in the Alaska statewide transportation plans and is thus ineligible for federal funding and should not be considered by the FHWA in the EIS. <i>E.g.</i>, 23 U.S.C. § 134(j)(5).</p>	<p>The comment states "The FHWA violated the FAHA by Approving the Addition of the Knik Arm Bridge to the Anchorage Area Transportation Improvement Program."</p> <p>Local governments have the authority to plan transportation improvements, which are ultimately approved by the state in the State Transportation Improvement Program (STIP). The U.S. Department of Transportation (USDOT) determines whether the STIP is in conformity with the Clean Air Act, as amended. The USDOT issued its Air Quality Conformity determination in compliance with USDOT regulations.</p> <p>The comment states AMATS did not have a final EIS when it added the Knik Arm Crossing to its transportation plan.</p> <p>The requirement for a major investment study (MIS) was repealed by Section 1308 of TEA-21 in 1998, prior to the incorporation of the Knik Arm Crossing (KAC) project into AMATS transportation plans. That repeal also significantly predated the issuance of the <i>Knik Arm Crossing Environmental Impact Statement (EIS)</i>. The EIS thoroughly considered the effects of and alternatives to the proposed project. Accordingly, the FHWA lawfully certified the AMATS's plans containing the KAC project.</p>
328	1	Carr	ARRC	<p>While we are pleased to see that the FEIS adopted some of the changes we recommended in response to the DEIS, we still find other responses unsatisfactory.</p> <p>The Mat-Su Borough and the AARC have accelerated the Port MacKenzie Rail Spur project and in fact, the Surface Transportation Board (STB) is in the middle of the NEPA process with public hearings scheduled in March 2008. In accordance with KABATA's comment above, the FEIS must reconsider the impact the two projects have on each other.</p>	<p>The comment states that the Port MacKenzie Rail Spur and KAC projects should be evaluated to assess the impacts that the two projects have on each other. The KAC Project's NEPA process has considered the effects of the proposed rail spur and the KAC Project as follows.</p> <p>The KAC Project's NEPA process considered the cumulative effects of the proposed rail spur. The <i>Knik Arm Crossing Cumulative Impacts Technical Report</i> (KABATA, 2006) presents the methods and results of the listing of reasonably foreseeable future actions (RFFAs) considered for the development of the EIS. The Council on Environmental Quality (CEQ) calls for use of a systematic method and documentation when determining RFFAs and their contributions to cumulative effects. The Study Team's methodology included 1) key informant interviews; 2) reviews of publicly available data; 3) input and review from local experts who formed an Economic Working Group (EWG); and 4) close coordination among the Study Team members to ensure a consistent understanding of identified RFFAs. The Study Team conducted more than 50 interviews with individuals knowledgeable about the region's economy and likely future developments including interviews with representatives of the Alaska Railroad Corporation (ARRC).</p> <p>The Study Team examined a large number of RFFAs pertaining to the Mat-Su, Knik Arm, and Anchorage sectors of the Study Area, but retained for further analysis only those future actions that must be probable rather than speculative, and that they must be substantiated by funding, permit applications, formally adopted planning documents, or other tangible and reliable sources. Forty-five RFFAs that met the preceding criteria were reviewed for application to the analysis of cumulative impacts. Of the 45 RFFAs, 34 are not contingent on the proposed build alternatives and would occur with or without the project. These 34 RFFAs included the Mat-Su Road/Rail corridor to Willow Road. The <i>Knik Arm Crossing Cumulative Impacts Technical Report</i> (KABATA, 2006) forms the basis of the Indirect and Cumulative Effects section of the Final Environmental Impact Statement.</p> <p>The ARRC Port MacKenzie Rail Spur specifically mentioned in the comment is also noted in the baseline rail information (<i>Final Environmental Impact Statement [Final EIS]</i> Section 3.2.2.3.1), and in Sections 4.9.4.2.2, 4.9.4.5.3, and 4.9.4.8.3 of the <i>Final EIS</i>. FHWA acknowledges the progress being made by the Surface Transportation Board in advancing the Port MacKenzie Rail Spur Environmental Impact Statement.</p>
328	2	Carr	ARRC	<p>While we are pleased to see that the FEIS adopted some of the changes we recommended in response to the DEIS, we still find other responses unsatisfactory.</p> <p>The situation surrounding the Port MacKenzie Rail Spur has clearly changed over the past year. The Mat-Su Borough received a \$10 million dollar appropriation during the 2007 legislative session to perform conceptual engineering and environmental documentation for the Port MacKenzie rail extension, and ARRC has been working with the Mat-Su Borough to develop this documentation. The Surface Transportation Board has begun the NEPA process for this project, with scoping meetings planned for March 2008. Therefore, it is necessary for the Knik Arm Crossing FEIS to consider this project in evaluating cumulative impacts.</p>	<p>The comment states that the Port MacKenzie Rail Spur should be considered in evaluating cumulative impacts of the KAC Project.</p> <p>The <i>Knik Arm Crossing Cumulative Impacts Technical Report</i> (KABATA, 2006) presents the methods and results of the listing of reasonably foreseeable future actions (RFFAs) considered for the development of the EIS. The Study Team examined a large number of RFFAs pertaining to the Mat-Su, Knik Arm, and Anchorage sectors of the Study Area, but retained for further analysis only those future actions that must be probable rather than speculative and that must be substantiated by funding, permit applications, formally adopted planning documents, or other tangible and reliable sources. Forty-five RFFAs that met the preceding criteria were reviewed for application to the analysis of cumulative impacts. Of the 45 RFFAs, 34 are not contingent on the proposed build alternatives and would occur with or without the KAC Project. These 34 RFFAs included the Mat-Su Road/Rail corridor to Willow Road. The rail spur specifically mentioned in the comment is also noted in the baseline rail information, and in effects sections for soil/geology, and wetlands. The <i>Knik Arm Crossing Cumulative Impacts Technical Report</i> (KABATA, 2006) forms the basis of the Indirect and Cumulative Effects section of the Final Environmental Impact Statement.</p> <p>The ARRC Port MacKenzie Rail Spur specifically mentioned in the comment is also noted in the baseline rail information (<i>Final Environmental Impact Statement [Final EIS]</i> Section 3.2.2.3.1), and in Sections 4.9.4.2.2, 4.9.4.5.3, and 4.9.4.8.3</p>

					of the <i>Final EIS</i> . FHWA acknowledges the progress being made by the Surface Transportation Board in advancing the Port MacKenzie Rail Spur Environmental Impact Statement.
328	3	Carr	ARRC	<p>While we are pleased to see that the FEIS adopted some of the changes we recommended in response to the DEIS, we still find other responses unsatisfactory.</p> <p>Further, KABATA states</p> <p>"Even in the Wasilla-Palmer to Anchorage corridor, which has an established population base, ARRC cannot make commuter rail feasible and estimates high subsidies would be required."</p> <p>Commuter rail in this corridor is feasible and ARRC continues to move forward along with the Mat-Su Borough, the City of Wasilla, and community interests to make this a reality. The comment about subsidies is inappropriate since KABATA is well aware that all public transit requires subsidies, including highways. That is why KABATA has an MOU with the Alaska Department of Transportation making the KAC part of the National Highway System, which makes it eligible for federal highway subsidies. We recommend any comment relating to commuter rail in the Wasilla/Palmer to Anchorage corridor be deleted since it is irrelevant to the KAC.</p>	<p>The commenter questions the statement that "ARRC cannot make commuter rail feasible and estimates high subsidies would be required."</p> <p>KABATA used information obtained from the Alaska Railroad Corporation (ARRC) that shows commuter rail will need subsidies to cover all operation and maintenance costs.</p> <p>The comment asks that "any comment relating to commuter rail in the Wasilla/Palmer to Anchorage corridor be deleted since it is irrelevant to the KAC."</p> <p>As identified in Table 4-51, the <i>Final Environmental Impact Statement (Final EIS)</i> assumes commuter rail/mass transit will be implemented along the Glenn Highway by the year 2030 independent of the development of the Knik Arm Crossing. Commuter rail was evaluated by FHWA therefore it is still important to retain references to rail to demonstrate that the <i>Final EIS</i> evaluated all reasonable alternatives.</p>

APPENDIX A--PART 2-2
NONSUBSTANTIVE COMMENTS RECEIVED
ON THE *FINAL EIS*

Nonsubstantive Comments on the *Final EIS*

Commenter	Commenter type	Affiliation	Comment text	Response
Gardner	Individual	Public	I think all of the time and work that has been committed towards the development of the Knik Arm Bridge is time well spent. KABATA and all of the decision makers in this project got it right and I am for one, 100% in favor of this new, overdue, much needed transportation corridor.	
Begich	Agency	Municipality of Anchorage	<p>The Municipality supports the changes and response to issues listed below reflected in FEIS.</p> <ol style="list-style-type: none"> 1.The edits to the FEIS reflect the complete Anchorage Assembly Resolution, in support of the Knik Arm Crossing, by including "subject to resolution of environmental and economic issues" 2.In the event the project does proceed, the offer to advance purchase for hardship, protection or at a property owners request is commendable. 3.FHWA's commitment to apply Context Sensitive Solutions in the design and development the project is recognized in the FEIS. 4.Recognition that preserving and accommodating vehicle, pedestrian and transit access to the Government Hill neighborhood. 5.Recognition that the Knik Arm Crossing will not require any future local, state, federal funds and that there is no financial recourse to responsibility to the State or local governments. 6.Related to the financial expectations of the project, given existing state and federal funds programmed for this project, the Municipality would agree that the capital markets will ultimately decide the financial feasibility of the project. 7."In the real world, financial close for toll-backed financing cannot occur until after a Record of Decision selecting a build alternative has been obtained, among other conditions precedent to a financial close. In the event the capital marketplace determines the project is not a good investment, it will not be financed or built." 	
(continued on next page)				

Nonsubstantive Comments on the *Final EIS* (continued)

Commenter	Commenter type	Affiliation	Comment text	Response
French	Organization	Government Hill Community Council	Government Hill is proud of the fact that we are Anchorage's first and oldest neighborhood, and residents choose to live there because of the people, the historic nature, the relative isolation and the depth of community involvement and community cohesion, all factors that perhaps can be summed up by "Quality of Life". The number of residents who have lived out most of their lives in our small community is remarkable. It is irrefutable that the proposed Knik Arm Crossing will forever and completely destroy that "Quality of Life". It is important to acknowledge that there is no possible mitigation that will change that fact.	
French	Organization	Government Hill Community Council	The GHCC also supports the stipulation in the March 24, 2007 letter when it states "these mitigation issues must be fully resolved before construction may proceed."	
French	Organization	Government Hill Community Council	Government Hill Community Council appreciates the addition of the Advisory Council on Historic Preservation to the consulting parties for the Section 106 negotiations.	
French	Organization	Government Hill Community Council	Government Hill Community Council agrees with the EPA in Comments 313-3, 313-4, 313-13, 313-14, the Matanuska Susitna Borough, the MOA, the U.S. Army Corps of Engineers in comments 293-2, 293-4 and the Alaska SHPO that the FEIS has not explored and evaluated additional or true alternatives that would avoid or minimize environmental impacts.	

APPENDIX B

SECTION 106 PROGRAMMATIC AGREEMENT AND MEMORANDA OF UNDERSTANDING

**KNIK ARM CROSSING PROJECT
SECTION 106 PROGRAMMATIC AGREEMENT
PROJECT # ACSTP-0001 (277)/56047**

Table of Contents

Knik Arm Crossing Project--Section 106 Programmatic Agreement

Preamble	1
Stipulations	6
I. Schedule.....	6
II. Actions Needed to Complete Identification and Evaluation.....	6
III. Mitigation Measures	8
<i>Funding of the KABATA Liaison</i>	<i>8</i>
<i>Contractors and Contract Adherence to PA.....</i>	<i>10</i>
<i>Archaeological Monitoring.....</i>	<i>10</i>
<i>Treatment of Human Remains</i>	<i>12</i>
<i>Architectural Documentation of Government Hill Properties.....</i>	<i>13</i>
<i>Marketing and Relocation of Three Identified Government Hill Historic Properties.....</i>	<i>13</i>
<i>Government Hill Neighborhood Plan (Neighborhood Plan).....</i>	<i>15</i>
<i>FHWA Consultations with the Government Hill Community.....</i>	<i>15</i>
<i>Construction of a Cut-and-Cover Tunnel on Government Hill</i>	<i>15</i>
<i>Collection and Curation</i>	<i>16</i>
<i>Construction Management Plan</i>	<i>17</i>
<i>Air Quality Monitoring</i>	<i>17</i>
IV. Additional Mitigation Measures for Indirect Effects.....	17
<i>Certified Local Government Historic Preservation Plans</i>	<i>17</i>
V. Development of Standard Mitigation Agreements (SMAs)	20
<i>Summary of Implementation using MOUs.....</i>	<i>20</i>
<i>Mitigation Measures for Future, Unforeseen Adverse Effects</i>	<i>20</i>
<i>Change in Eligibility of Historic Properties</i>	<i>21</i>
<i>Documentation of Implementation using Standard Mitigation Agreements (SMAs).....</i>	<i>22</i>
VI. Tak'at Tribal Replacement Fish Camp	22
VII. Discoveries.....	23
VIII. Emergencies.....	23
IX. Review Protocols	24
<i>Status Reports</i>	<i>24</i>
<i>Effectiveness of PA.....</i>	<i>24</i>
<i>FEIS Traffic Impacts.....</i>	<i>24</i>
<i>ACHP Site Visit.....</i>	<i>25</i>
<i>Document Reviews</i>	<i>25</i>
X. Dispute Resolution.....	25
XI. Public Objections	25
XII. Roles and Responsibilities of the Signatories and Invited Signatories.....	26
XIII. Amendment.....	26
XIV. Duration	26
XV. Termination.....	27

Appendices

- Appendix A: Area of Potential Effect (APE) Figures
- Appendix B: Notification Process and Standard Mitigation Agreements
- Appendix C: Base Policy When Encountering Human Remains
- Appendix D: Human Remains Contacts
- Appendix E: Community Council District Boundaries (Map)
- Appendix F: Roles and Responsibilities
- Appendix G: Acronyms and Abbreviations

**PROGRAMMATIC AGREEMENT
AMONGST THE FEDERAL HIGHWAY ADMINISTRATION,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
ELMENDORF AIR FORCE BASE, AND
THE ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE KNIK ARM CROSSING PROJECT
ACSTP-0001(277)/56047**

Preamble

Description of the Undertaking

Whereas, the Alaska Division of the Federal Highway Administration (FHWA), in cooperation with the Knik Arm Bridge and Toll Authority (KABATA), an applicant for Federal assistance, proposes to construct a new bridge to span Knik Arm, connecting the Municipality of Anchorage and the Matanuska-Susitna Borough; and

Whereas, FHWA has identified the Northern Access-Erickson Alternative as the Recommended build alternative in the Final Environmental Impact Statement (FEIS) and defined the Area of Potential Effect (APE) for the Knik Arm Crossing (KAC) Project (Appendix A, Figures 1a-1d - *Area of Potential Effect*); and

Whereas, FHWA has determined that the Northern Access-Erickson Alternative will have an adverse effect on the Government Hill Urban Renewal Historic District, which has been determined eligible for listing in the National Register of Historic Places (National Register), and may affect additional historic properties during the life of project design and development (through 2030) and have potential for other effects during implementation of Phases 1 and 2; and

Whereas, the project will be constructed in two distinct construction phases to provide needed capacity as traffic volumes grow, and the FEIS discloses the environmental impacts anticipated to result during the estimated 20-year design life of the project; and

Whereas, the two distinct construction phases for the KAC Project identified in the FEIS include:

Phase 1 will include a cut-and-cover tunnel beneath Erickson Street to connect with Loop Road/A-C Couplet and is scheduled to commence in 2009; and

Phase 2 is proposed to accommodate future traffic growth and includes a new roadway extension from the Phase 1 construction project to connect to the Ingra-Gambell Couplet; the timing of this project construction is dependent on future traffic growth; and

Whereas, FHWA or KABATA, as appropriate, shall ensure that this PA will become part of the design and construction specifications for whatever contracting method is utilized to construct Phase 1 and 2 of the KAC Project; and

Whereas, FHWA recognizes the potential for the KAC Project to increase traffic on the A-C Couplet and cause other unanticipated impacts south of the APE; and

Whereas, the recommended build alternative proposes to use a portion of the western bluff of the Elmendorf Air Force Base (EAFB), requiring Department of Air Force authorization and easement on federal land for project right-of-way, and

Whereas, FHWA has developed this Programmatic Agreement (PA), pursuant to 36 CFR Part 800, Section 800.14(b), to comply with the requirements of Section 106 for the adverse effects of Phase 1 and to establish the compliance strategy for the proposed planning and design required for Phase 2; and

Consulting Parties

Whereas, consulting parties, as referred to in this PA, include the Signatories, Invited Signatory, and Concurring Parties to this PA; and

Whereas, FHWA has consulted with the Alaska State Historic Preservation Officer (SHPO) in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. 470s) and 36 CFR 800; and

Whereas, FHWA has consulted with the Advisory Council on Historic Preservation (ACHP) following the ACHP's decision to participate in the development of the PA under 36 CFR Section 800.14(b) for a long-term project that requires ongoing consultation; and

Whereas, FHWA consulted with the Matanuska-Susitna Borough (MSB) and Municipality of Anchorage (Municipality) in order to fulfill its local government consultation as set forth in 36 CFR 800.2(c)(3); and

Whereas, FHWA consulted with Anchorage Historic Preservation Commission (AHPC), Anchorage Historic Properties, Inc. (AHPI), Alaska Association for Historic Preservation (AAHP), and Government Hill Community Council (GHCC) in order to fulfill its consultation with additional consulting parties as set forth in 36 CFR 800.2(c)(5); and

Whereas, FHWA consulted with the Knik Tribal Council, the Native Village of Eklutna, Eklutna, Inc. and Knikatu, Inc. in order to fulfill its tribal consultation requirements as set forth in 36 CFR Section 800.2(c)(2) as it relates to sites of traditional religious and cultural importance; and

Whereas, FHWA conducted the consultation process from 2005 through 2008; and

Identification and Evaluation

Whereas, FHWA, in consultation with the SHPO, conducted the identification and evaluation of historic properties which will be affected by the implementation of the KAC Project as evidenced by letters dated February 24, 2006 and June 23, 2006; and,

Whereas, FHWA acknowledges the possibility for the KAC Project to affect additional historic properties as yet unidentified in a portion of the western bluff of EAFB; and

Whereas, the additional identification and evaluation for historic properties, primarily archeological sites detailed in Stipulation II, *Actions Needed to Complete Identification and Evaluation*, will be completed as part of Phase 1 pursuant to the terms of this PA and as detailed in Stipulation IX.B, *Effectiveness of PA*; and

Whereas, FHWA allocated \$142,000 in grant funds on August 3, 2006, which have been administered by SHPO to enable the Municipality and the MSB, through the Certified Local Government (CLG) Program, to assist with the identification, evaluation, and planning for historic properties in their jurisdictions which may be affected during the implementation of the terms of this PA for Phases 1 and 2 of the KAC Project; and

Whereas, the Municipality, as the CLG, shall manage and administer any mitigation funding provided for the benefit of the GHCC under the terms of this PA; and

Other Agreements

Whereas, this PA outlines the procedures for Section 106 reviews required for future, unforeseen adverse effects through the development of Standard Mitigation Agreements (SMAs) developed among FHWA, KABATA, the SHPO, and other consulting parties, as appropriate, in accordance with Appendix B, *Notification Process and Standard Mitigation Agreements*; and,

Whereas, FHWA commits to continuing public notification and participation, as appropriate, during the implementation of the terms of this PA; and

Whereas, other federal agencies involved in project activities that are related to the KAC Project may fulfill their Section 106 responsibilities by notifying the ACHP and SHPO in writing of their intentions to comply with the terms of this PA as it applies to their undertaking(s); and

Whereas, EAFB shall use the terms of this PA to fulfill its Section 106 and Section 110 responsibilities as set forth in the NHPA; and

Whereas, the Municipality and MSB, as local governments with jurisdiction over the KAC Project area, have been invited as Concurring Parties without the right to amend or terminate the PA; and

Whereas, the GHCC, whose district boundaries are contained within the Municipality, shall form a four-person board selected according to Community Council by-laws (Government Hill Board) to represent the neighborhood during the Section 106 consultation process and have been invited to be a Concurring Party without the right to amend or terminate the PA; and

Whereas, FHWA invited AHPI, AHPC, and AAHP to be Concurring Parties without the right to amend or terminate the PA; and

Whereas, FHWA has invited the Knik Tribal Council and Native Village of Eklutna, the affected federally recognized Tribes, along with Knikatu, Inc. and Eklutna Inc., the Alaska Native Claims Settlement Act (ANCSA) village corporate entities, to be Concurring Parties concerning properties of traditional religious and cultural significance to them as part of FHWA's government-to-government consultation requirements for resources of Tribal interest off Tribal Lands without the right to amend or terminate the PA; and

Whereas, the Tribes' goals and objectives for this PA are the Tak'at Tribal Replacement Fish Camp, recognition that members of the Knik Tribal Council and the Native Village of Eklutna are descendants of the original people of this area, respectful treatment of human remains and artifacts, development of a collection and curation agreement that is sensitive to Tribal interests, and provision for historic preservation and cultural awareness training to the construction contractors; and

Whereas, ACHP is a Signatory to this PA and has the right to amend or terminate the PA; and

Whereas, EAFB is a Signatory to this PA for those actions under its jurisdiction with the right to amend or terminate the PA; and

Whereas, SHPO is a Signatory to this PA and has the right to amend or terminate the PA; and

Whereas, KABATA, as project sponsor, has participated in consultation pursuant to 36 CFR 800 and is signing this PA as an Invited Signatory with the right to amend or terminate the PA with the notification and concurrence of the Signatories, and shall be responsible to administer and implement the stipulations under the terms of this PA for and as directed by FHWA; and

Whereas, failure of a Concurring Party(ies) to sign this PA does not relieve FHWA and KABATA of the responsibility to execute the terms of this Agreement, unless so requested and amended by Signatories to this Agreement; and

Mitigation

Whereas, FHWA has taken an integrated approach to this PA where applicable NEPA requirements and Section 106 requirements pursuant to 36 CFR 800.2(a) and 800.3(b) for the KAC Project overlap; the provisions in this PA do not reflect all of the NEPA-related mitigation documented in the FEIS and Record of Decision (ROD); and

Whereas, FHWA views the historic properties as part of the broader Government Hill community setting and commits to mitigation and project design solutions developed in a manner that promotes the significant historic characteristics and continued viability of the neighborhood that have been documented in the KAC Project, *Recommendations for a Historic District(s): Government Hill, Anchorage, Alaska, Volumes 1 and 2* (Stephen R. Braund & Associates, 2006) and FEIS while meeting project goals; and

Whereas, construction of a cut-and-cover tunnel beneath Government Hill has been incorporated into the Knik Arm Crossing project design to provide for community cohesion and represents an environmental mitigation measure outlined in the FEIS that FHWA has concluded will assist in minimizing direct and indirect adverse effects to the Government Hill neighborhood and the Government Hill Urban Renewal Historic District; and

Now, therefore, FHWA, ACHP, EAFB, and SHPO (collectively “Signatories”) hereby agree that the undertaking shall be implemented in accordance with the following stipulations in consideration of the effects this undertaking will have on historic properties.

Stipulations

FHWA, in coordination with KABATA, shall ensure that the following stipulations are implemented:

I. Schedule

- A. FHWA shall provide the Signatories with the anticipated design and construction schedules concurrent with the initiation of the design phases for each construction phase of the project, so the Signatories can evaluate the appropriateness of the mitigation measures identified in the following stipulations at the then-current conditions. Preliminary design of the KAC Project is contained in the FEIS. Subsequent draft design and construction schedules for Phase 1 shall be provided immediately upon completion to the Signatories and shall allow for comments prior to the final design and construction schedules. The final design and construction schedules shall be provided as information is developed by the contractor and following review by FHWA and KABATA. Phase 2 design and construction schedules shall be provided in the same manner.
- B. FHWA shall ensure that archaeological surveys detailed under Stipulation II, *Actions Needed to Complete Identification and Evaluation*, is started no later than six (6) months after the publication of the ROD.
- C. FHWA will enter into negotiations with appropriate local governments and Tribal entities referenced in this PA to work out the scopes of work for MOUs that will establish baseline information used in the negotiation of SMAs and other appropriate mitigation required under the terms of this PA. It is the intent of this paragraph that FHWA will enter into negotiations, make its final decision, and present to the consulting parties for their signature, MOUs signed by FHWA no later than six (6) months after the date of this PA, in order to make funding available at the earliest possible date. All other stipulations in this PA are benchmarked to the ROD.

II. Actions Needed to Complete Identification and Evaluation

Archaeological Surveys at EAFB: FHWA shall ensure that the archaeological surveys of the portion of the APE that falls within EAFB, illustrated in Appendix A, *Area of Potential Effects Figures 1b and 1d*, are carried out prior to Phase 1 construction.

- A. Archaeologists and Historic Archaeologists meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 44738-44739) shall conduct an archaeological survey of lands within EAFB identified as falling within the APE for the project. With assistance from the qualified cultural resource professionals, FHWA will consult with SHPO, Tribes, KABATA, and EAFB to ensure identification and

documentation of any additional potential historic properties within the APE on EAFB lands.

- B. The survey(s) shall follow the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44718) for identification and testing procedures as presented in *Guidelines for Evaluating and Registering Archaeological Properties* (National Register Bulletin 2000).
- C. The archaeologist(s) shall evaluate any archaeological or potential historic properties identified within the APE for eligibility to the National Register using established National Register criteria. FHWA shall determine National Register eligibility in consultation with the SHPO, Tribes that attach religious and cultural significance to the site, and EAFB. All National Register evaluations will follow the Secretary of Interior's Standard's and Guidelines for Evaluation of Historic Properties, 36 CFR Part 63, and 36 CFR Part 800.4(c). Disputes concerning eligibility will be resolved by the Keeper of the National Register (Keeper) pursuant to 36 CFR Part 63 and 36 CFR Part 800.4(c)(2).
- D. For those properties that are determined to be eligible for inclusion in the National Register, FHWA shall apply the criteria of adverse effect (36 CFR Part 800.5) in consultation with the SHPO, EAFB and the Tribes that attach traditional religious and cultural significance to the property. The views of other consulting parties will be sought through consultation, as appropriate, if there is a finding that a project activity will cause an adverse effect.
- E. If it is determined that additional historic or archeological properties or properties of religious and cultural significance to Tribes located within the APE on EAFB will be adversely affected, FHWA shall consult with EAFB, KABATA, SHPO, and the Tribes to develop a mitigation plan for resolving adverse effects. If the parties cannot reach agreement on a SMA pursuant to Stipulation V.B.5, *Mitigation Measures for Future, Unforeseen Adverse Effects*, the matter shall be referred to the ACHP under the dispute resolution provision set forth in Stipulation X, *Dispute Resolution*, of this PA.
- F. Following the execution of the approved mitigation plan, appropriate analysis shall be conducted and the final report(s) shall be prepared. The scope of work for this review shall be determined in consultation with the SHPO prior to the initiation of these actions. The report(s) shall meet contemporary professional standards and follow the Alaska Office of History and Archaeology (OHA) Standards and Guidelines for Investigating and Reporting Archaeological and Historical Properties in Alaska (Historic Preservation Series #11) and the Secretary of the Interior's Standards and Guidelines for reports (48 FR 44734-44737). FHWA shall ensure that all final cultural resource survey, evaluation and mitigation reports, resulting from actions pursuant to this PA, are provided to SHPO, the Tribes, KABATA, and EAFB. EAFB will incorporate the findings of the final reports into its cultural resource files and use for the management of other cultural resources in proximity to that portion of the installation used for the KAC Project.

- G.** FHWA shall consult with EAFB regarding the curation of artifacts resulting from the implementation of a mitigation plan to ensure that applicable Department of Defense (DoD) guidelines are met.
- H.** FHWA and KABATA shall ensure that the archaeologist(s) attend any necessary safety briefings and be provided appropriate safety equipment as required by EAFB prior to conducting surveys on EAFB lands.
- I.** FHWA and KABATA shall ensure compliance with the Department of Air Force Right-of-Entry letter to KABATA, An Entity of the State of Alaska on EAFB (No. FXSB2001-08-ROE-06) or applicable amendment or replacement thereof.
- J.** FHWA and KABATA shall ensure compliance with Department of the Air Force, Pacific Air Forces Memorandum for Distribution A, *Base Policy When Encountering Human Remains* (Appendix C).
- K.** Unless otherwise agreed to by FHWA, EAFB, SHPO, KABATA, Tribes, and CLGs, the scopes of work developed under Stipulation II shall not exceed two (2) years from the publication of the ROD.

III. Mitigation Measures

A. Funding of the KABATA Liaison

- 1. **Role and Responsibilities:** FHWA shall participate in funding for a KABATA staff liaison (KABATA Liaison) position within six (6) months after the date of this PA. The KABATA Liaison shall be hired in consultation with FHWA and SHPO, employed by KABATA, consult and collaborate with all Section 106 consulting parties as the primary point of contact to implement Phases 1 and 2 of this PA, and will also provide regular project development and construction status updates. Key tasks will include the following:
 - a. Establish and coordinate consultation and project status update meetings. The purpose of these meetings may include, but not be limited to, the following: to recommend priorities and goals of mitigation and assess progress of those plans, and identify any recommended changes or amendments to the current mitigation plans based upon evolving information or developments during construction.
 - b. Establish and maintain lines of project related communication and consultation with the consulting parties and the design and construction engineers, including oversight and monitoring of internet sites created for the KAC Project.

- c. Manage and supervise the Phase 1 mitigation measures and any associated FHWA deliverables that are to be reviewed by the Section 106 consulting parties.
- d. Address requests by consulting parties to review deliverables and documentation that are provided to concurring parties.
- e. Assist the CLGs with the preservation planning efforts provided for in Stipulation IV.A, *Certified Local Government Historic Preservation Plans*.
- f. Assist the CLGs with evaluation related to unanticipated effects in Stipulation VII, *Discoveries*.
- g. Develop semi-annual status reports on the implementation of this PA as detailed in Stipulation IX, *Review Protocols*.
- h. Collect any notices from Section 106 consulting parties to this PA that identify impacts different than those stated in this PA to historic properties for KABATA and FHWA processing per Stipulation IX, *Review Protocols*. The Liaison shall research the issues listed in the notice and prepare a recommendation for the disposition of the request and action by FHWA. The notification process for consulting parties to submit requests for consideration is outlined in Appendix B, *Notification Process and Standard Mitigation Agreements*.
- i. Provide administrative support and technical assistance required by Section 106 consulting parties to meet the terms of this PA.
- j. Provide, on an annual basis, or more frequently as circumstances require, historic preservation and cultural awareness training to the construction contractors and employees. The training shall include information related to the following topics:
 - i. Illegal collection and disturbance of historic and prehistoric cultural materials, including human remains.
 - ii. Scope of applicable laws and regulations.
 - iii. Initial identification and reporting of archeological materials, human remains, and historic buildings or structures that may potentially be discovered during the course of their work.
- k. Develop a Best Practices Manual related to historic properties and a Section 106 “lessons learned” case study on the KAC Project that may be helpful to future Section 106 processes on this and other projects. The Best Practice Manual and “lessons learned” case study will be made available to the parties of this PA and

other interested parties within one (1) year of the completion of Phase 1 construction.

2. **Qualifications and Selection:** The KABATA Liaison will meet the Secretary of Interior's Professional Qualification Standards (48 FR 44738-44739) for architectural history with experience in historic preservation planning. KABATA shall use its standard hiring procedures in the selection of the Liaison; however, FHWA and SHPO shall be part of a committee to recommend any selection of the candidate for the position. As part of the semi-annual reporting, KABATA shall verify that the Liaison position is staffed and that SHPO is provided the opportunity to comment on their performance in carrying out the tasks set forth in this PA.

B. Contractors and Contract Adherence to PA

FHWA and KABATA shall ensure that contracts developed in the implementation of all phases of this project shall expressly refer to and require compliance with the stipulations of this PA. Contractors responsible for work set forth in this PA shall have qualified staff that meet the Secretary of Interior's Professional Qualification Standards (48 FR 44738-44739) for architectural history with experience in historic preservation planning to ensure the satisfactory compliance with the terms of the PA during the design and construction of each project phase. The KABATA Liaison will provide appropriate guidance regarding the implementation of terms of this PA to all contractors, particularly those involved in construction related activities.

C. Archaeological Monitoring

1. FHWA, in consultation with ACHP and SHPO, shall develop an archaeological monitoring plan for areas directly affected by Phase 1 and Phase 2 construction activities that will identify where monitoring is recommended. The plan will ensure the recordation and recovery of previously unidentified historic properties, including archaeological sites, human remains, sacred objects, items of cultural patrimony, and other usual or unique cultural features and artifacts.
2. Monitoring shall be guided by detailed monitoring protocols contained in the archaeological monitoring plan that FHWA submits to SHPO and Tribes for review and comment. These parties shall have thirty (30) days to review the plan and provide comments to FHWA. Should SHPO or the Tribes object within 30 days after receipt of the plan, FHWA shall consider all comments and, as appropriate, consult with the objecting party to resolve any objections. Comments from SHPO and Tribes shall be considered in the approval of the final monitoring protocols by FHWA.
3. The monitoring plan shall be developed by an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology to be consistent

with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-44737).

4. FHWA shall require that all monitoring is done by or under the supervision of an archaeologist(s) meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 FR 44738-44739).
5. FHWA shall ensure that a preconstruction meeting is conducted that includes the construction project engineer, the construction contractor, and the supervising archaeologist to discuss the terms and conditions of the monitoring plan. SHPO, Tribes, and other identified consulting parties shall be invited to attend. A minimum of fifteen (15) working days notice shall be provided prior to the meeting.
6. FHWA shall ensure that the following archaeological monitoring protocol is implemented in the areas determined to need monitoring as described in the monitoring plan:
 - a. An archaeological monitor will be on site during all ground disturbing activities within areas in the APE determined to need monitoring as described in the monitoring plan.
 - b. The archaeological monitor shall be authorized to halt construction in a specific location, or to redirect work to other locations, while documenting and recovering previously undiscovered archaeological sites, human remains, sacred objects, items of cultural patrimony, and unusual or unique archeological data.
 - c. If monitoring yields an unanticipated discovery or effect, all work shall be redirected away from the immediate vicinity of the discovery and protocol will proceed in accordance to Stipulation VII, *Discoveries*.
 - d. If human remains are encountered during monitoring, they shall be treated in accordance with Stipulation III.D., *Treatment of Human Remains*. All work shall stop adjacent to the discovery, with the area of work stoppage being adequate to provide for the security, protection, and integrity of the remains. Construction shall resume in the area of the discovery only after proper removal of the human remains.
7. A report, meeting contemporary professional standards and the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-44737), shall be written for the project following the completion of monitoring activities. The SHPO and Tribes will provide written comments within thirty (30) calendar days of receipt of adequate information. FHWA shall ensure that the final report is provided to all Signatories, Invited Signatory, Tribal entities, and other consulting parties, as appropriate.

8. Any materials collected as part of archaeological monitoring efforts shall either be returned to owners of the properties where the collection took place, or curated in accordance with 36 CFR 79 and 11 AAC 16.020-16.030 at a repository within the State, meeting Tribal interests as determined by FHWA, in consultation with the Tribes and SHPO.

D. Treatment of Human Remains

1. FHWA shall ensure that any and all human remains encountered during project implementation are treated with dignity and respect pending a determination of their ultimate treatment and identification of descendants.
2. Should human remains be encountered, work will be stopped at once in the locality to prevent further disturbance and the supervising archaeologist shall immediately notify the Alaska State Troopers (AST), KABATA, FHWA, EAFB, and SHPO. If the human remains are determined or believed by the supervising archaeologist to be Native American, the supervising archaeologist shall also immediately notify the Knik Tribal Council and the Native Village of Eklutna. See Appendix D, *Human Remains Contacts*, for specific contact information for Agency and Tribal Officials involved with human remains consultation.
3. If the remains appear recent in the judgment of the supervising archaeologist, FHWA and KABATA shall defer to the opinion of the AST and/or State Medical Examiner (SME) for a determination of whether the remains are of a forensic nature and/or subject to criminal investigation.
4. A physical anthropologist experienced in the analysis of human remains shall examine the human remains offsite to determine racial identity. The physical anthropologist shall document, analyze, and photograph the remains so that an independent assessment of racial identity can be made. The physical anthropologist shall be afforded no more than thirty (30) days time to conduct his or her analysis.
5. If the human remains are not Native American, and a determination has been made by AST and SME that a death investigation is not warranted, then FHWA and KABATA, in consultation with the SME, will identify, locate and inform descendants of the deceased. If no descendants are found, the supervising archaeologist shall obtain a permit from the Alaska State Bureau of Vital Statistics, and re-inter the remains in a designated area.
6. Should any associated or unassociated funerary objects, sacred objects, or objects of cultural patrimony as defined by the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001) be encountered, work shall be stopped at once in the locality to prevent further disturbance and the supervising archaeologist

shall immediately notify KABATA, FHWA, EAFB, SHPO, the Knik Tribal Council, and the Native Village of Eklutna.

7. Should any human remains be encountered on EAFB, FHWA and KABATA shall ensure compliance with Department of Air Force, Pacific Air Forces Memorandum for Distribution A, *Base Policy When Encountering Human Remains*, November 10, 2008 (Appendix C).

E. Architectural Documentation of Government Hill Historic Properties

FHWA shall complete the following architectural documentation measures within two (2) years from the publication of the ROD subject to the granting of property access.

1. All architectural documentation will be prepared by a qualified professional(s) meeting the Secretary of the Interior's Professional Qualification Standards for Architectural History (48 FR 44738 - 44739).
2. FHWA shall prepare OHA architectural recordation forms to document the current conditions of the three contributing elements of the Government Hill Urban Renewal Historic District at 710 Ash Street (ANC-01878), 730 Ash Street (ANC-01880), and 601 Vine Street (ANC-02103) that would be individually affected under the Erickson Alternative.
3. FHWA shall submit the site plans and architectural recordation forms to SHPO along with black and white 35-millimeter photographs or digital photographs of the properties' exteriors. The drawings and photographs shall meet Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation Level III standards, and the written data shall meet documentation Level II standards.
4. SHPO shall have thirty (30) calendar days from receipt of FHWA architectural documentation submittals to review and comment. The FHWA shall take into account any comments received during the review period and make revisions as appropriate.
5. FHWA shall ensure that the original documentation is filed with the National Archives and Records Administration Pacific Alaska Region office in Anchorage upon completion.

F. Marketing and Relocation of Three Identified Government Hill Historic Properties

All stipulations in this provision relate to the three (3) contributing historic properties that will be impacted within the Government Hill Urban Renewal Historic District.

1. Prior to those construction actions in Phase 2 that will affect the Government Hill Urban Renewal Historic District, FHWA will provide a qualified professional(s) meeting the Secretary of the Interior's Professional Qualification Standards for Historic Architecture (48 FR 44738-44739) in coordination with a structural engineer to investigate the structural integrity of the three affected properties at 710 Ash Street (ANC-01878), 730 Ash Street (ANC-01880), and 601 Vine Street (ANC-02103) to determine the reasonableness of their relocation. Assessment by a qualified professional(s) meeting the Secretary of the Interior's Professional Qualification Standards for Architectural History or Historic Architecture (48 FR 44738-44739) shall also consider moved properties under the National Register Criteria Consideration B: whether relocation can maintain the contributing properties' eligibility as defined. Right-of-way acquisitions for Phase 2 are not scheduled until future development of the KAC Project; however, advance right-of-way acquisition and relocation may be made available during Phase 1 for hardship cases, protective/economic purchases, or property owners requesting advanced acquisition. In the event properties are acquired in advance for right of way acquisitions, FHWA will ensure that such properties are protected and monitored pending final decisions regarding their disposition.
2. FHWA shall provide the recommendations of the structural integrity investigations to SHPO and the ACHP for review and comment. The SHPO and ACHP shall have thirty (30) days from FHWA's submittal of its recommendations to review and comment on the recommendations. The FHWA shall take into account any comments received during the review period. FHWA shall ensure that the draft and final recommendations of the structural integrity investigations are provided to all Signatories, Invited Signatory, and consulting parties as appropriate.
3. For the three (3) affected historic buildings located at 710 Ash Street (ANC-01878), 730 Ash Street (ANC-01880), and 601 Vine Street (ANC-02103) that the Signatories agree can be reasonably relocated, FHWA shall market the purchase, relocation, and maintenance of these buildings by qualified buyers (who are willing to relocate and rehabilitate the buildings appropriately to maintain their historic significance) by making them available for purchase for one dollar (\$1).
4. Relocations will occur prior to the implementation of Phase 2. Priority shall be placed on relocating properties within the boundaries of the Government Hill Urban Renewal Historic District in accordance with the Government Hill Historic Preservation Plan and the Secretary of the Interior's Standards for the Rehabilitation of Historic Properties (1995). The SHPO shall have thirty (30) days from FHWA's submittal of a relocation proposal to review and comment. The FHWA shall take into account any comments received during the review period.
5. Owing to the passage of time before the Phase 2 marketing and relocation of these historic properties pursuant to 36 CFR Section 800.4(c)(1), FHWA, in consultation

with the SHPO will decide if it is appropriate to re-evaluate this mitigation measure if the historic significance of the properties change or if there is a change in the anticipated effects of the project, pursuant to Stipulation IX, *Review Protocols* (e.g., should the building be altered or demolished and no longer require relocation). This re-evaluation shall be implemented prior to and in coordination with the Phase 2 construction actions that would affect the Government Hill Urban Renewal Historic District. Should a change in National Register significance or effect be determined, FHWA shall reopen consultation with the Signatories to this PA and identified consulting parties, as appropriate, to reconsider the appropriateness of this measure and to explore other means of mitigation.

G. Government Hill Neighborhood Plan (Neighborhood Plan)

Not later than six (6) months after the date of this PA, but independent of and separate from this PA, FHWA shall negotiate, in consultation with SHPO and GHCC, and enter into a MOU with the Municipality whereby FHWA shall provide funding for the Municipality to develop a Government Hill Neighborhood Plan to serve as a planning and management “tool” that promotes the historic character and values of the Government Hill neighborhood and the orderly growth, improvement, and future development of the neighborhood. The Neighborhood Plan shall address preservation of buildings and landscape features that define the historic character of the Government Hill neighborhood, while guiding other aspects of the growth and development in the neighborhood. The Municipality shall develop the Neighborhood Plan in consultation with SHPO and the GHCC, and will incorporate the Government Hill Historic Preservation Plan, as appropriate, as detailed in Stipulation IV.A.3.

H. FHWA Consultations with the Government Hill Community

FHWA shall consult and collaborate with the Government Hill Board on behalf of the GHCC early in the design phases for both Phase 1 and Phase 2 construction projects. This is to ensure that design and construction minimize and mitigate impacts to the broader Government Hill community, including local roads, sidewalks, access, and visual impacts. In order to integrate mutual goals, FHWA shall consult with SHPO, the ACHP, the Municipality, and other consulting parties, as appropriate, during this process to maximize the effectiveness and compatibility of historic properties mitigation measures.

I. Construction of a Cut-and-Cover Tunnel on Government Hill

1. Pursuant to the NEPA FEIS, construction of a cut-and-cover tunnel located beneath Government Hill has been incorporated into the KAC Project to minimize community impacts. The tunnel location and function have been optimized to minimize right-of-way relocations and adverse impacts to Government Hill while balancing the requirements of design, safety, topography, and the need to reestablish the local road system on top of the tunnel.

2. FHWA shall implement Context Sensitive Mitigation (CSM) to minimize and mitigate adverse effects of the KAC Project to Government Hill and maintain the Government Hill neighborhood's building and landscape character, as nearly as practicable, and shall consult and coordinate with the Municipality, SHPO, and the GHCC and their representatives to consider the Government Hill Neighborhood Plan and Government Hill Historic Preservation Plan to the extent such plans have been completed. The CSM will be guided by the recommended approaches in the Secretary of Interior's Standards for the Treatment of Historic Properties during design development. The Government Hill Board will be consulted early and frequently during the design phases to address design specifics, such as the tunnel lid and reestablishing character defining features. Initiation of CSM coordination with the Government Hill community will begin coincidental with the beginning of design development for the project and will adhere to a community participation protocol developed in advance by FHWA and GHCC.
3. FHWA shall provide concept plans, developed in coordination with a qualified professional(s) meeting the Secretary of the Interior's Professional Qualification Standards for Architectural History (48 FR 44738-44739), for the cut-and-cover tunnel lid to SHPO, Government Hill Board, and the Municipality for review and comment throughout the stages of design development at approximately the 30-60-90% designs for both Phase 1 and Phase 2.
4. If it is determined that additional properties will be adversely affected by refinements in the design of the cut-and-cover tunnel, FHWA shall consult with the identified consulting parties to develop a SMA for resolving adverse effects in accordance with Stipulation V.B.3 and V.B.4, *Mitigation Measures for Future, Unforeseen Adverse Effects*. If the parties cannot agree on a mitigation plan, they may invite the ACHP to consult or invoke the dispute resolution provision found in this PA in Stipulation X, *Dispute Resolution*.

J. Collection and Curation

1. The FHWA will assist the property owner, in consultation with SHPO, the Knik Tribal Council, the Native Village of Eklutna, and other consulting parties as appropriate, shall develop Curation Agreement(s) (Appendix B in 36 CFR 79) to address the disposition of artifacts, faunal materials, and/or samples collected, along with photographs, field notes, and other related material for activities covered by this PA.
2. FHWA shall fund all reasonable costs for curation of materials collected in conjunction with the recovery actions under this PA. FHWA, in consultation with the receiving institution, shall ensure that collected materials are conserved and packaged

in a manner acceptable to the receiving institution and are in accordance with 36 CFR 79 *Curation of Federally-Owned and Administered Archaeological Collections*.

K. Construction Management Plan

FHWA will ensure that the construction contractor develops a Construction Management Plan for Phase 1 and Phase 2 to minimize economic impacts and community disruption, including noise, construction traffic, work schedules, and neighborhood access, access to Government Hill businesses, and the Government Hill Elementary School. FHWA will provide GHCC and SHPO a draft Construction Management Plan no later than the 60% design review. The GHCC and SHPO will provide comments on this plan as it relates to historic properties once a final draft is prepared for Phase 1 and Phase 2.

L. Air Quality Monitoring

FHWA shall ensure air quality monitoring as per the Anchorage Metropolitan Area Transportation Solutions (AMATS) Long Range Transportation Plan commitment to assess before and after conditions for air pollutants in the vicinity of where the Knik Arm bridge traffic will merge with other A-C Couplet traffic in downtown Anchorage.

IV. Additional Mitigation Measures for Indirect Effects

A. Certified Local Government Historic Preservation Plans

1. MSB Historic Preservation Plan

- a. FHWA acknowledges that there is potential for indirect effects in the MSB due to land development caused by construction of the KAC Project which may affect historic properties. FHWA shall provide additional funding, independent of and separate from this PA, to the MSB to verify through field investigations the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough*, originally funded through the CLG Program Historic Preservation Plans in 2006.

FHWA shall negotiate and enter into a MOU with the MSB for field verification of sensitivity areas identified in the MSB preservation plan based on a scope developed in consultation with SHPO no later than six (6) months after the date of this PA. The scope will be negotiated with the MSB Manager. FHWA shall provide funding to conduct appropriate field studies, not to exceed two years, necessary for MSB to implement components of the MSB Historic Preservation Plan. The field investigations will assist MSB in their efforts to establish historic preservation planning and management “tools” that will guide future land use, historic preservation, and development in areas under their jurisdiction. The archaeologists shall meet the Secretary of the Interior’s Professional Qualification

Standards for Archaeology. The geographic area within which the field test verifications will occur shall be selected based on areas identified in the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough* as locations of sensitivity for prehistoric and historic cultural resources. MSB will coordinate the field test verification with the Tribes pursuant to Stipulation IV.A.2, *Tribal Traditional, Religious and Cultural Preservation*.

- b. FHWA shall provide funding to the SHPO for Geographic Information System (GIS) and Alaska Heritage Resource Survey (AHRs) data entry for MSB sites. SHPO will provide updated GIS and AHRs information to MSB one year after signing of a Reimbursable Service Agreement. FHWA shall provide funding to MSB to incorporate AHRs data into MSB's GIS system. After completion of the MSB field survey, SHPO will enter updated and new site information and complete GIS data entry within one year of receipt and provide the updated information to the MSB.
 - c. Access to the site location information that will serve as a basis for the MSB Historic Preservation Plan and the AHRs inventory database shall be restricted from the general public by the Archaeological Resources Protection Act of 1979 Public Law 96-95, *Archaeological Resources Protection Act of 1979, Sections 9a-b*, and Alaska Statute 40.25.120 (a)(4) (Public Record Disclosures), and Policy and Procedure No. 50200 which states that access to historic, prehistoric, and paleontological site location information contained in the AHRs is closed to the general public.
2. Tribal Traditional, Religious and Cultural Preservation
- a. FHWA shall fund one full-time staff position (such as an archaeologist or Tribal cultural heritage professional), not exceed two (2) years, to assist the Knik Tribal Council and the Native Village of Eklutna to research, interview Elders, and document properties of traditional religious and cultural significance and historic resources important to the Tribes for the purpose of collaboration with the MSB field test verification effort of the MSB Historic Preservation Plan referenced in Stipulation IV.A.1, *MSB Historic Preservation Plan*. Not later than six (6) months after the date of this PA, FHWA shall negotiate and enter into MOUs with the Tribes, independent of and separate from this PA, to fund this staff position.
 - b. FHWA shall continue to consult with the Knik Tribal Council, the Native Village of Eklutna, Knikatu, Inc., and Eklutna, Inc., during the archaeological survey on EAFB, and for any archaeological monitoring deemed appropriate, based upon surveys, oral histories, and research, during project construction.

3. Municipality Historic Preservation Plans

- a. **Downtown area:** FHWA will provide funding to the Municipality to complete Historic Preservation Plans for the neighborhoods of Government Hill (as detailed below in IV.A.3.b), Downtown, South Addition, and Fairview (Appendix E, *Community Council District Boundaries*), and provide funding for the South Addition historic property baseline inventory. The plans will be guided by the Secretary of Interior's Standards for the Treatment of Historic Properties and Standards for Preservation Planning (36 CFR 68; U.S. Department of the Interior, National Park Service, 1995). Not later than six (6) months after the date of this PA, FHWA shall negotiate, in consultation with the SHPO, and enter into a MOU with the Municipality, independent of and separate from this PA, to fund the inventory and Historic Preservation Plans. These Plans will be used to establish historic preservation planning and management "tools" that will guide area development that promotes Anchorage and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., *FEIS Traffic Impacts*. In addition to new funding, the Municipality will use remaining funding provided by this project in 2006 to develop the Historic Preservation Plans. The Municipality shall complete the inventory and Historic Preservation Plans within two (2) years of the issuance of the ROD.
- b. **Government Hill:** FHWA will provide funding to the Municipality for its use to complete the Government Hill Historic Preservation Plan. The funding will be administered by the Municipality in its capacity as the CLG. The Historic Preservation Plan will address preservation of buildings and landscape features that define the historic character of the Government Hill neighborhood as defined by the Government Hill Community Council Boundary (Appendix E, *Community Council District Boundaries*). The Historic Preservation Plan will use information in the *Knik Arm Crossing Project Recommendations for Historic Properties Volumes 1 and 2* (Stephen R. Braund & Associates, 2006) and the FEIS. The Historic Preservation Plan shall be developed in coordination with the Government Hill Neighborhood Plan detailed in Stipulation III.G, *Government Hill Neighborhood Plan*. FHWA shall also provide funding to the Municipality for its use in recording and archiving oral histories from Government Hill's older residents.
- c. The Government Hill Historic Preservation Plan will be guided by recommended approaches in the Secretary of Interior's Standards for the Treatment of Historic Properties and Standards for Preservation Planning

(36 CFR 68; U.S. Department of the Interior, National Park Service, 1995).

V. Development of Standard Mitigation Agreements (SMAs)

Based upon the information developed in accordance with the MOUs with the Municipality, MSB, SHPO, and the Tribes, FHWA, in consultation with the SHPO, and other consulting parties, as appropriate, shall determine the need to develop and implement additional mitigation measures for both Phase 1 and Phase 2 of the KAC Project.

A. Summary of Implementation using MOUs

1. FHWA shall use MOUs to carry out Stipulation III.G, *Government Hill Neighborhood Plan*, and Stipulation IV.A, *Certified Local Government Historic Preservation Plans* and Stipulation IV.A.2, *Tribal Traditional, Religious, and Cultural Preservation* and as a continuation of the financial investment that has already been made to the Municipality and the MSB to address adverse impacts that have been identified during the Section 106 process. FHWA will use information developed under the terms of the separate MOUs as guidance to negotiate SMAs and other mitigation required per the terms of this PA for Phase 1 and Phase 2.
2. FHWA will develop MOUs with Municipality and MSB CLGs, SHPO, and Tribes no later than six (6) months after the date of this PA to carry out Stipulations III.G, IV.A, and IV.A.2 mentioned immediately above and Stipulation I.C, *Schedule*.
3. FHWA will post the MOUs on the KAC Project Website for public review to demonstrate how they will be used to develop preservation plans related to Phase 1 of the KAC Project.

B. Mitigation Measures for Future, Unforeseen Adverse Effects

1. As detailed in Stipulation IX, *Review Protocols*, FHWA shall analyze traffic impacts, not later than one (1) year prior to the scheduled construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the FEIS.
2. If, after the foregoing analysis, FHWA concludes such impacts are greater than anticipated by the FEIS, FHWA will consult with the SHPO and other consulting parties to determine what, if any, additional mitigation is appropriate for identified historic properties. FHWA will use a SMA when developing an expanded project mitigation plan (see Appendix B, *Notification Process and Standard Mitigation Agreements*).

3. In addition to traffic impacts, FHWA will consult with the SHPO and other consulting parties, as appropriate, to review other unforeseen effects on previously unidentified and identified historic properties or those that have been determined eligible due to the passage of time. As part of this consultation, alternative mitigation measures will be evaluated to resolve adverse effects resulting from Phase 1 or Phase 2 project activities. Such consultation shall not exceed 60 days, otherwise the FHWA will notify the ACHP and invite it to consult or provide formal comments.
4. Following consultation with consulting parties, FHWA shall submit the proposed SMA to the SHPO for review and concurrence within 30 days. The FHWA shall implement the SMA at the conclusion of the 30-day review period unless the SHPO or other consulting parties object. If, after consultation, FHWA and the SHPO cannot agree on terms for a proposed SMA, FHWA shall refer the matter to the ACHP pursuant to Stipulation X, *Dispute Resolution*.
5. If FHWA and SHPO disagree regarding the effects to identified historic properties, FHWA shall request the ACHP's opinion. ACHP will advise FHWA of its opinion regarding effects to the property(ies). The FHWA shall take into account the ACHP's opinion before making a final determination regarding how it will proceed. If an adverse effect is found by FHWA, a mitigation plan shall be developed and implemented in accordance with Stipulation V.B.3 and V.B.4 above.

C. Change in Eligibility of Historic Properties

1. If any properties previously considered not eligible are determined eligible as a result of future identification and evaluation efforts or due to discoveries, the effects to those properties will be considered as part of project implementation. The FHWA shall determine National Register eligibility in consultation with SHPO, Tribes, and other consulting parties, as appropriate. Disputes between FHWA and SHPO, and Tribes regarding National Register eligibility will be forwarded to the Keeper of the National Register for resolution.
2. As a result of *Unforeseen Adverse Effects* or potential refinements or alterations to project design throughout the development and construction of Phase 2, FHWA may conclude that there are unforeseen effects to historic properties. FHWA, in consultation with SHPO, Tribes, the ACHP, and other consulting parties, as appropriate, will apply the Criteria of Adverse Effects in 36 CFR Section 800.5. The notification process for unforeseen adverse effects is detailed in Appendix B, *Notification Process and Standard Mitigation Agreements*. The FHWA shall determine National Register eligibility in consultation with SHPO, Tribes, and other consulting parties, as appropriate. Disputes between FHWA and SHPO, and Tribes regarding National Register eligibility will be resolved by the Keeper.

D. Documentation of Implementation using Standard Mitigation Agreements (SMAs)

1. FHWA shall develop SMAs to carry out any mitigation that occurs in Phase 1 or in Phase 2 that exceeds the specific mitigation measures outlined in this PA under Stipulation III, *Mitigation Measures*, and Stipulation IV, *Additional Mitigation Measures for Indirect Effects*.
2. Once the SMAs have been signed by KABATA, the SHPO, and other consulting parties, as appropriate, the terms of the SMAs will be implemented within one year of the signing. A list of SMAs shall be posted bi-monthly by KABATA on its web site.
3. FHWA shall develop SMAs with only the affected consulting parties and SHPO. The participation of the ACHP is required only if there is a dispute.
4. If an SMA proposes mitigation that does not fall under the standard mitigation categories in Appendix B, *Notification Process and Standard Mitigation Agreements*, FHWA will involve the ACHP in consultation to determine whether an amendment to this PA is appropriate or mitigation can be modified to comport with the standard mitigation in Appendix B.

VI. Tak'at Tribal Replacement Fish Camp

FHWA and KABATA are committed to working with the Knik Tribal Council and Native Village of Eklutna to acquire land for a replacement fish camp site in an effort to recognize the importance of Tak'at as a traditional cultural site, as identified in the FEIS. While no mitigation is required, FHWA and KABATA have offered to secure a replacement location where Knik and Eklutna Tribes could help maintain their historic identities by operating a traditional fish camp along with the cultural practices, ceremonies, and educational opportunities that are part of their heritage, subject to the laws of the State of Alaska governing the taking of fish. Key factors important to site selection include fishability, access, land acquisition availability, and safety. The Tribes will jointly determine how the site will be used and shared.

FHWA and KABATA will oversee the acquisition of the replacement fish camp after FHWA approval of the ROD and an acceptable site is identified. Once ownership has been transferred to the Tribes, and the Tribes have an internal agreement in place on the use of the site, this Stipulation will be complete.

VII. Discoveries

Should any previously unidentified historic property be affected by the undertaking or identified property be affected in an unanticipated manner, FHWA shall ensure that reasonable efforts are made to avoid, minimize, or mitigate effects adverse effects to such properties.

- A. Discoveries shall be identified, documented, and evaluated by a qualified professional who shall, at a minimum, meet the Secretary of Interior's Professional Qualification Standards (44 FR 44738-9), in an applicable discipline.
- B. All ground disturbing activities in the immediate vicinity of the discovery shall be redirected away from the discovery; the KABATA Liaison shall be immediately notified and shall take initial steps to protect and preserve the discovery such as flagging the area for avoidance; the KABATA Liaison shall notify FHWA of the discovery; and FHWA shall notify the Signatories of this PA, as well as Tribes and other consulting parties as appropriate, within 48 hours of the discovery.
- C. The notification shall include FHWA's assessment of National Register eligibility of the discovery, developed in consultation with SHPO. If the discovery is determined eligible for the National Register, a proposed treatment plan to resolve adverse effects will be delivered to appropriate consulting parties.
- D. Consulting parties provided with notification of the discovery shall respond to this notification within five (5) days.
- E. FHWA, in consultation with SHPO, shall take into account responses to the notification of discovery regarding National Register eligibility and proposed actions to resolve adverse effects.
- F. FHWA will notify the Signatories of this PA, Tribes, and other consulting parties as appropriate, in writing of the treatment plan to avoid, minimize, or mitigate effects to historic properties; implement the treatment plan; and submit a final report regarding eligibility and treatment of the discovery to the SHPO.
- G. The discovery of human remains is addressed in Stipulation III.D, *Treatment of Human Remains*.

VIII. Emergencies

- A. Should FHWA deem it necessary to respond to an emergency declared by the President, a Tribal government, or the Governor of Alaska, or another imminent threat to public health or safety creates a hazardous condition or results in a threat to the integrity of historic properties and warrants action within thirty (30) days or less, FHWA and

KABATA shall notify SHPO of the measures taken to respond to the emergency or hazardous condition within 24 hours of the emergency, or as soon as conditions permit. Should a notice be provided to KABATA or FHWA by a local government or a work crew, FHWA and KABATA shall immediately notify SHPO of the situation and the measures taken to respond to the emergency or hazardous condition (contact information in Appendix D, *Human Remains Contacts*). SHPO will respond to emergencies within 48 hours of notification.

- B. FHWA and KABATA shall notify other consulting parties within 5 days and consulting parties shall comment on or provide assistance about the emergency to FHWA and KABATA through the KABATA Liaison. They shall immediately notify the KABATA Liaison and the FHWA Division Administrator (Contact information in Appendix B, *Notification Process and Standard Mitigation Agreements* via email and telephone of their intent to submit comments, and shall submit comments within five (5) calendar days of FHWA and KABATA's initial notification. In instances where the nature of the emergency or hazardous condition does not allow for such coordination, FHWA will advise consulting parties accordingly.
- C. For natural emergencies, KABATA and FHWA shall make the determination regarding the need to proceed with in coordination with FEMA or other local emergency response authorities. Emergency notifications, status, and outcomes shall be documented in the semi-annual reports detailed in Stipulation IX.A, *Status Reports*.

IX. Review Protocols

- A. **Status Reports:** FHWA and KABATA shall provide status reports to Signatories every six (6) months by the end of January and July through the completion of Phase 1 construction, or for the first five (5) years starting within six months of the publication of the ROD, whichever benchmark occurs sooner. FHWA shall consult with SHPO and the ACHP at that benchmark to determine the frequency and type of future status reports. The status reports will document how all the Stipulations of the PA are being implemented. At a minimum, the KABATA Liaison shall convene an annual meeting each February to update all consulting parties and to discuss particular issues reported in the semi-annual reports.
- B. **Effectiveness of PA:** At the completion of Phase 1 construction, the KABATA Liaison and the Signatories shall review the effectiveness of this PA based on information gained from the Phase 1 design and construction process combined with the information provided by the Signatories through completion of Stipulation II, *Actions Needed to Complete Identification and Evaluation*, Stipulation III, *Mitigation Measures*, and Stipulation IV, *Additional Mitigation Measures for Indirect Effects*.
- C. **FEIS Traffic Impacts:** FHWA shall evaluate vehicular traffic impacts on the A-C Couplet in downtown Anchorage, not later than one (1) year prior to the scheduled

construction of Phase 2, to determine whether there may be adverse effects to historic properties that were not anticipated based on the FEIS.

- D. ACHP Site Visit:** ACHP shall conduct a site visit to monitor implementation of the stipulations at a minimum of every two (2) years through the construction of Phase 1, or for the first five years of construction, whichever benchmark occurs sooner. The first site visit conducted by the ACHP will be a year after the publication of the ROD.
- E. Document Reviews:** FHWA and KABATA shall post to the KABATA website plans, specifications, reports, and other documents to be reviewed under the terms of this PA for a minimum of thirty (30) days. The consulting parties will be notified when documents for review are posted. Consulting parties will have thirty (30) calendar days to submit comments on any documents reviewed under the terms of this PA. This review schedule does not apply to information related to Tribal resources for which government-to-government consultation is required.

X. Dispute Resolution

- A.** Should any Signatory, Invited Signatory, or Concurring Party to this PA object within thirty (30) calendar days from receipt to any report or documentation provided for review or actions proposed pursuant to this PA, FHWA shall consult with the objecting party and SHPO to resolve the objection.
- B.** If FHWA determines that the Section 106 related objection cannot be resolved through consultation, it shall request the further comments or staff level recommendations from the ACHP pursuant to 36 CFR 800.6(b). Any ACHP comment provided in response to such a request will be taken into account by the FHWA, in accordance with 36 CFR 800.6(c)(2), with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this PA that are not subject to the dispute will remain unchanged.
- C.** At any time during implementation of the measures stipulated in this PA, should an objection to any such measure or its manner of implementation be raised, FHWA shall take the objection into account and consult as needed to resolve the objection.

XI. Public Objections

- A.** Pending the completion of Phase 1 and Phase 2 activities, FHWA and KABATA shall ensure opportunities for ongoing public participation for the Section 106 related activities. This PA and any amendments, and PA related reports, plans, and documents, with the exception of documentation containing sensitive cultural resource information, will be made available for review to the general public at the KABATA office, or on the KABATA website, or through other reasonable means.

- B. Any timely objections from the public related to historic preservation, in general, or the terms of this PA in particular, shall be considered by FHWA and KABATA, in consultation with SHPO, with respect to the terms of this PA. Comments are to be submitted to the KABATA Liaison and the FHWA Division Administrator (Contact information in Appendix B, *Notification Process and Standard Mitigation Agreements*). The KABATA Liaison, within ten (10) days after receipt, will research the issue and make a recommendation to FHWA and SHPO for responding to the objection. Within ten (10) days after receipt from the KABATA Liaison, FHWA and SHPO shall consider the issue and provide a response.

XII. Roles and Responsibilities of the Signatories and Invited Signatories

To successfully implement this PA, roles and responsibilities have been established for the Signatories and Invited Signatory. The roles and responsibilities of each party are detailed in Appendix F, *Roles and Responsibilities*.

XIII. Amendment

- A. The Signatories shall review this PA each January following its execution to consider whether its terms are being properly met to respond to current conditions. The Signatories shall have thirty (30) calendar days to notify FHWA if an amendment should be considered. Any amendments to this PA recommended during the review shall be considered in accordance with Stipulation IX, *Review Protocols* (36 CFR 800.6(c)(7)), as appropriate. If the review results in a recommendation to amend the PA, the consulting parties shall consult for a minimum of thirty (30) days prior to the proposed amendment to the PA.
- B. SHPO, EAFB, and ACHP may request FHWA to consider an amendment, whereupon they shall consult to consider such amendment pursuant to 36 CFR 800.6(c)(7). Amendments shall be executed in the same manner as this PA.

XIV. Duration

- A. This PA shall continue in full force and effect until all measures provided for are completed or until ten (10) years from the execution date of this PA. At the end of the fifth year after the execution date of this PA, a re-assessment of the effectiveness of the PA, taking into account effects on historic properties, including the development of SMAs, shall be conducted by the Signatories and the KABATA Liaison. At any time prior to such re-assessment, KABATA may request in writing that FHWA, ACHP, EAFB, and SHPO review KABATA's project schedule and consider an extension or

modification of this PA. No extension or modification shall be effective unless all Signatories to the PA have agreed to it in writing.

- B.** A time extension to complete the Stipulations and measures set forth under this PA beyond the PA duration of ten (10) years shall be considered based upon a letter of support from the SHPO verifying continued effectiveness of this PA for the mitigation of effects to historic properties. Should SHPO express concerns, the PA may be amended following consultation with Signatories, Invited Signatory, and other consulting parties pursuant to Stipulation XIII, *Amendment*.

XV. Termination

Any Signatory with the right to terminate this PA may do so by providing thirty (30) days written notice to the other Signatories. The Signatories will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, FHWA will seek further comments of ACHP pursuant to 36 CFR 800.7.

Execution and Implementation of this PA evidence that FHWA has consulted with SHPO and ACHP on the Knik Arm Crossing Project, and has taken into account the project's effects on historic properties in accordance with its Section 106 responsibilities.

Signatories

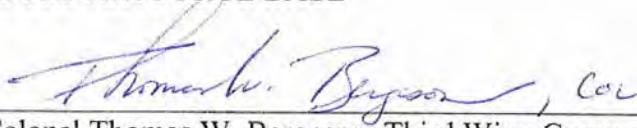
FEDERAL HIGHWAY ADMINISTRATION

By:  12-15-08
David Miller, Division Administrator Date

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:  12/29/08
John M. Fowler, Executive Director Date

ELMENDORF AIR FORCE BASE


By:  12-22-08
Colonel Thomas W. Bergeson, Third Wing Commander Date

STATE HISTORIC PRESERVATION OFFICER

By:  12-19-08
Judith Bittner, Alaska SHPO Date

Invited Signatory

KNIK ARM BRIDGE AND TOLL AUTHORITY

By:  12-5-08
Andrew Niemiec, Executive Director Date


Concurring Parties

KNIKATNU, INC.

By: Raymond Theodore
Raymond Theodore, President

12-17-08
Date

EKLUTNA, INC.

By: 
Michael Curry, President

12/30/08
Date

KNIK TRIBAL COUNCIL

By: Debra Call
Debra Call, President

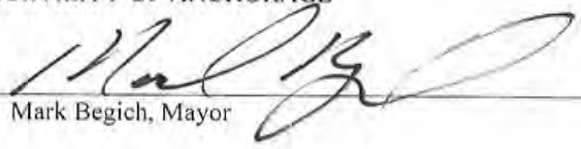
12/15/08
Date

NATIVE VILLAGE OF EKLUTNA

By: *Dorothy Cook* 12-12-08
Dorothy Cook, President Date

MUNICIPALITY OF ANCHORAGE

By:


Mark Begich, Mayor

12-24-08
Date

MATANUSKA-SUSITNA BOROUGH

By: _____
John Duffy, Borough Manager Date

GOVERNMENT HILL COMMUNITY COUNCIL

By: _____
Julie Jessal, President Date

ANCHORAGE HISTORIC PROPERTIES, INC.


By: _____
Gina Holloman Date

ALASKA ASSOCIATION FOR HISTORIC PRESERVATION

By: _____
Jessica Verges Date

ANCHORAGE HISTORIC PRESERVATION COMMISSION

By:


Darrel Hess

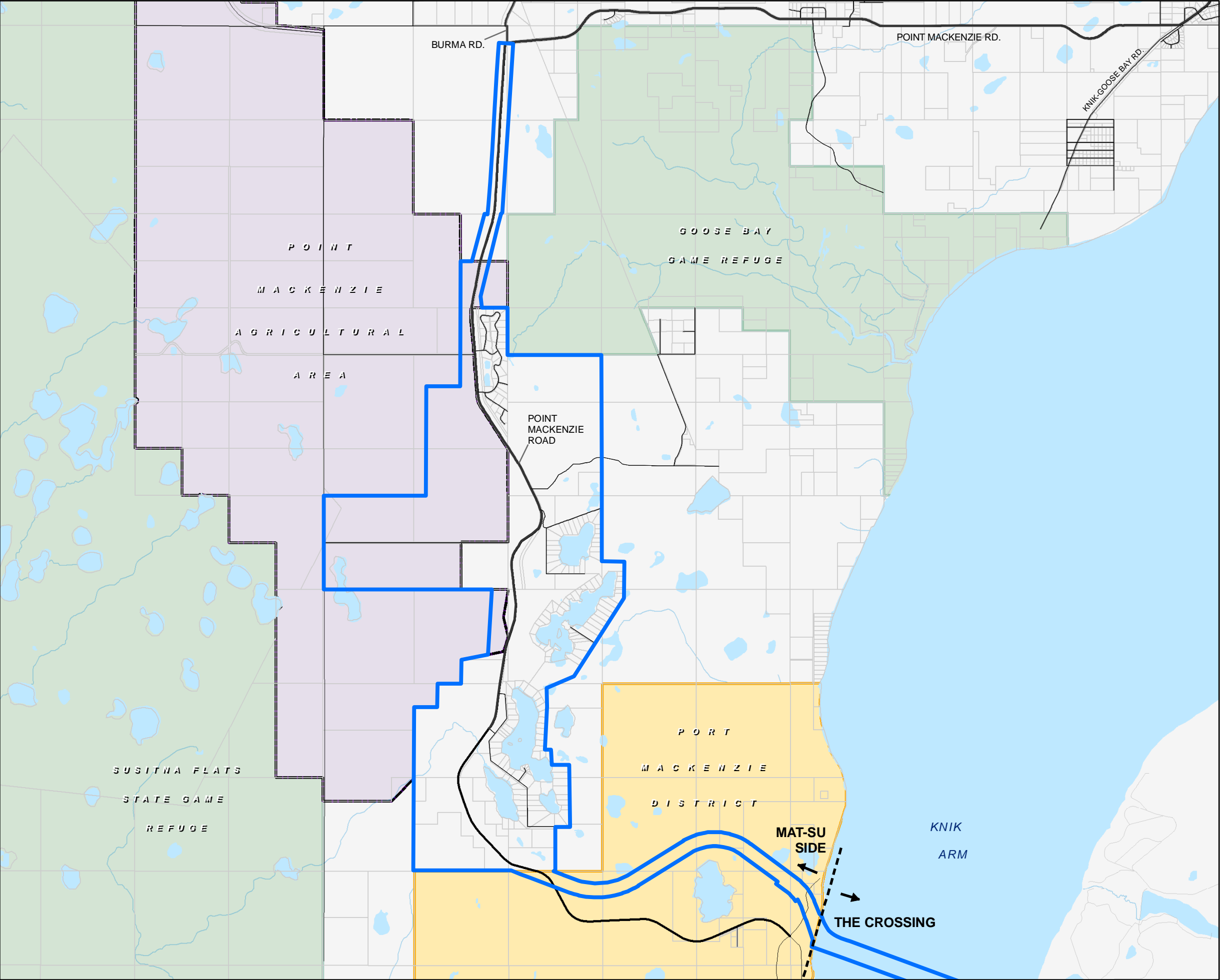

Date

12-18-08

APPENDIX A






KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

AREA OF POTENTIAL EFFECT



Appendix A
Knik Arm Crossing
Mat-Su Side: Section 106
Area of Potential Effect

Figure 1a

-  Area of Potential Effect
-  Port MacKenzie District
-  State park or refuge
-  Point MacKenzie Agricultural Area
-  Parcel boundary

The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These drawings are for review purposes only and are not intended for use in securing permits or for construction purposes.



Map Notes:

Map Projection:
AK State Plane Zone 4, NAD 83

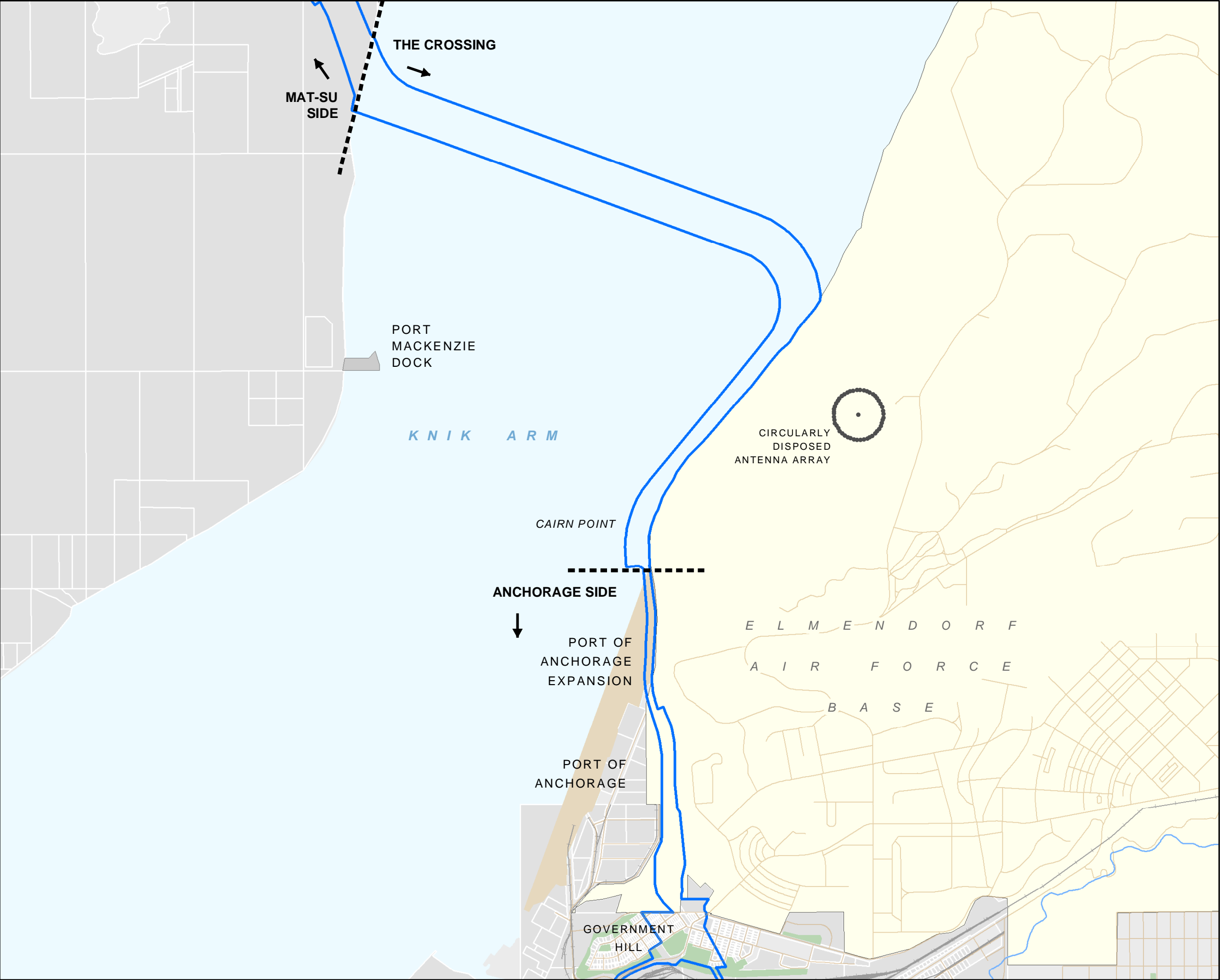
File: Z:\200936 Knik Arm Bridge & Toll Authority\
21132 NEPA EIS, Permitting & Prel Engineering\
GIS\MXD\106\msb_ape.mxd

Data Sources: MOA, MSB
MSB, AKDNR, HDR, GeoNorth

Author: HDR Alaska, Inc.
May 8, 2008








0 1 2 Miles





Appendix A
Knik Arm Crossing
The Crossing: Section 106
Area of Potential Effect

Figure 1b

-  Area of Potential Effect
-  Elmendorf Air Force Base
-  Park
-  Parcel boundary
-  Port of Anchorage expansion
-  Alaska Railroad
-  Road

The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These drawings are for review purposes only and are not intended for use in securing permits or for construction purposes.



Map Notes:

Map Projection:
AK State Plane Zone 4, NAD 83

File: Z:\200936 Knik Arm Bridge & Toll Authority\
21132 NEPA EIS, Permitting & Prel Engineering\
GIS\MXD\106\crossing_ape11x17.mxd

Data Sources: MOA, MSB
MSB, AKDNR, HDR, GeoNorth

Author: HDR Alaska, Inc.
May 12, 2008

0 1 2 Miles



Appendix A
Knik Arm Crossing
Anchorage Side: Section 106
Area of Potential Effect

Figure 1c

- Area of Potential Effect
 - Erickson Alternative
 - Area inventoried to establish historic context
 - Historic district
 - Property contributing to historic district
 - Individually eligible historic property
- | | |
|---------------------|------------------------------|
| 1. Residence | 5. Water tower |
| 2. Wireless station | 6. Square & Round Dance Club |
| 3. Loxtave house | |
| 4. Ranch house | |
- Alaska Railroad
 - Elmendorf Air Force Base
 - Port of Anchorage expansion

Geographic Information Systems (GIS) base data presented on this map is developed and maintained by state and local government agencies and acquired by HDR Alaska, Inc. GIS data is not the official representation of legal data such as property boundaries. In the preparation of this data, HDR attempts to offer the most current, correct, and clearly expressed information possible, but there may be inaccuracies in the data.

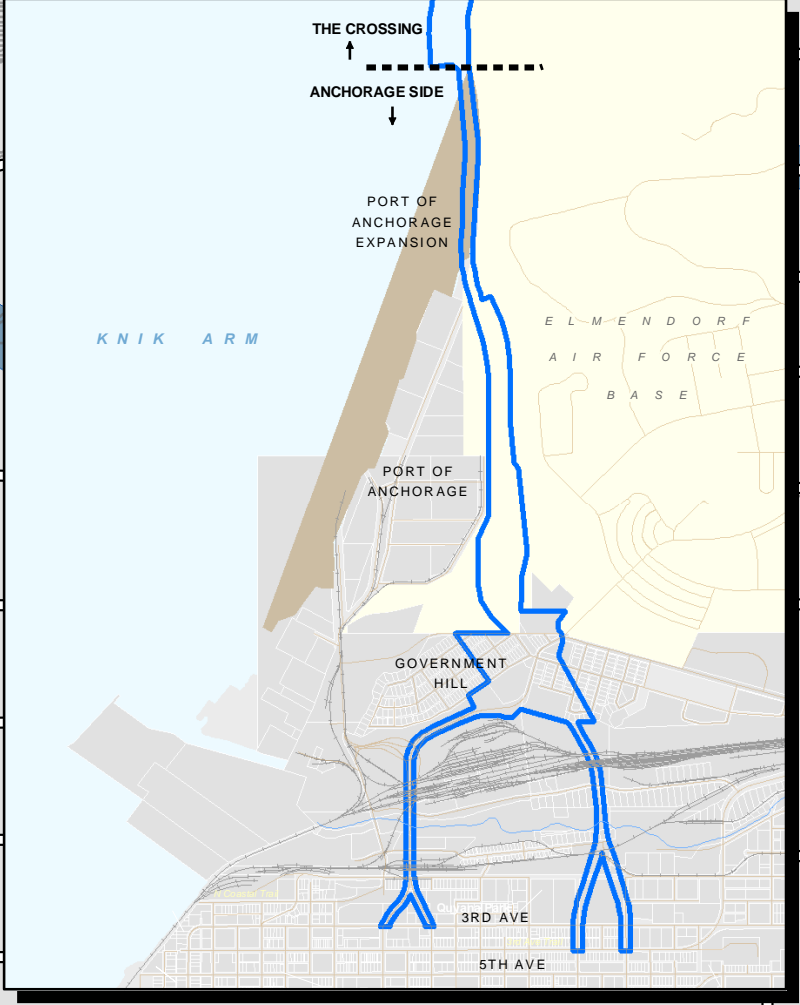
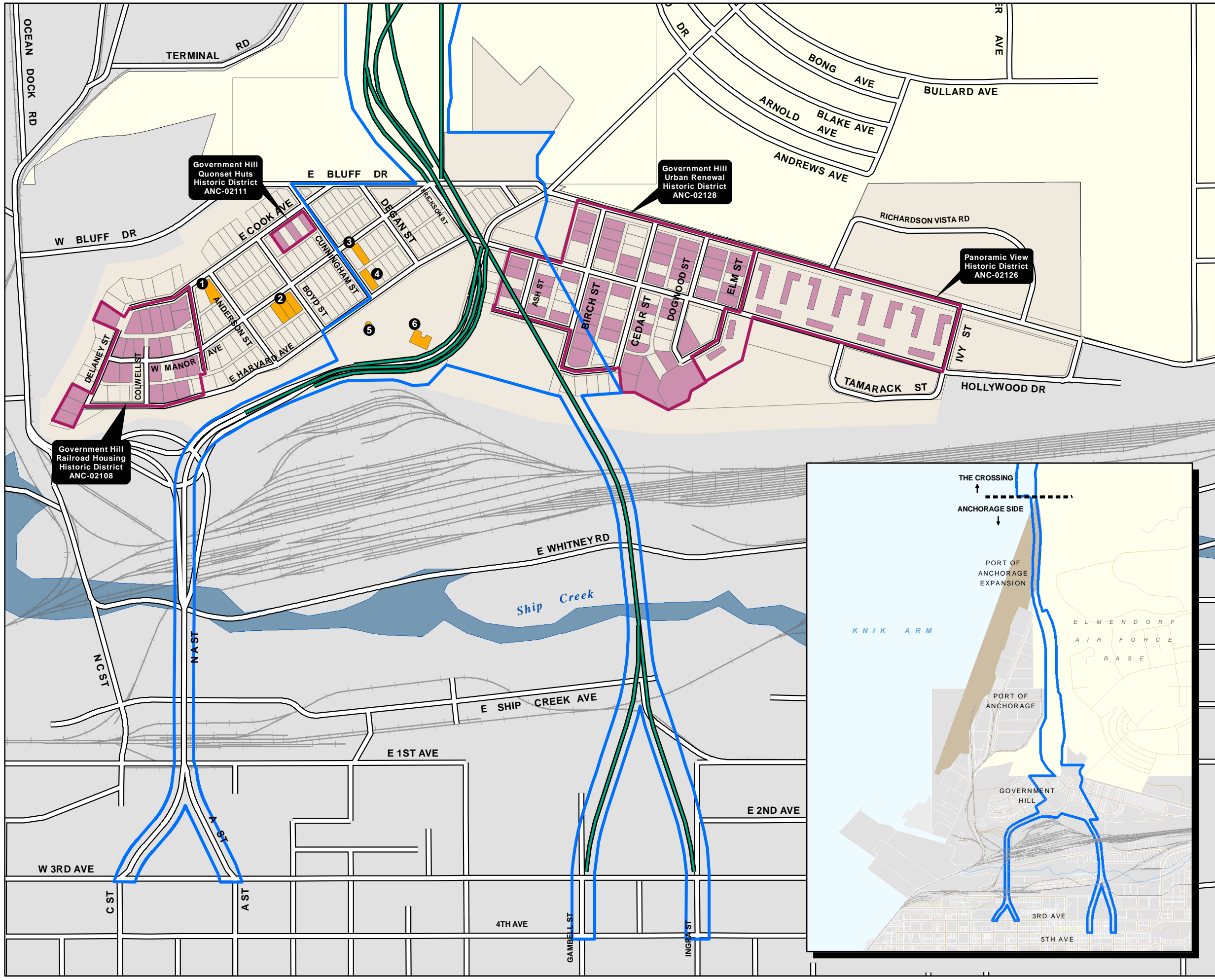
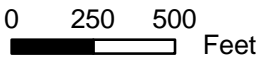
The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These drawings are for review purposes only and are not intended for use in securing permits or for construction purposes.



Map Notes:

Printing Date: May 12, 2008
Projection Information:
Name: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Datum: North American 1983
File: GvtHillHistoricDistrict_ape.mxd
HDR Alaska, Inc.

Data Sources: MOA, HDR, SB&A










Appendix A

Knik Arm Crossing

Area of Potential Effect

within Elmendorf Air Force Base

Figure 1d

-  Area of Potential Effect
Located within
Elmendorf Air Force Base
-  Project
Right-of-Way
-  Elmendorf Air Force Base
-  Park
-  Parcel
-  Alaska Railroad
-  Road

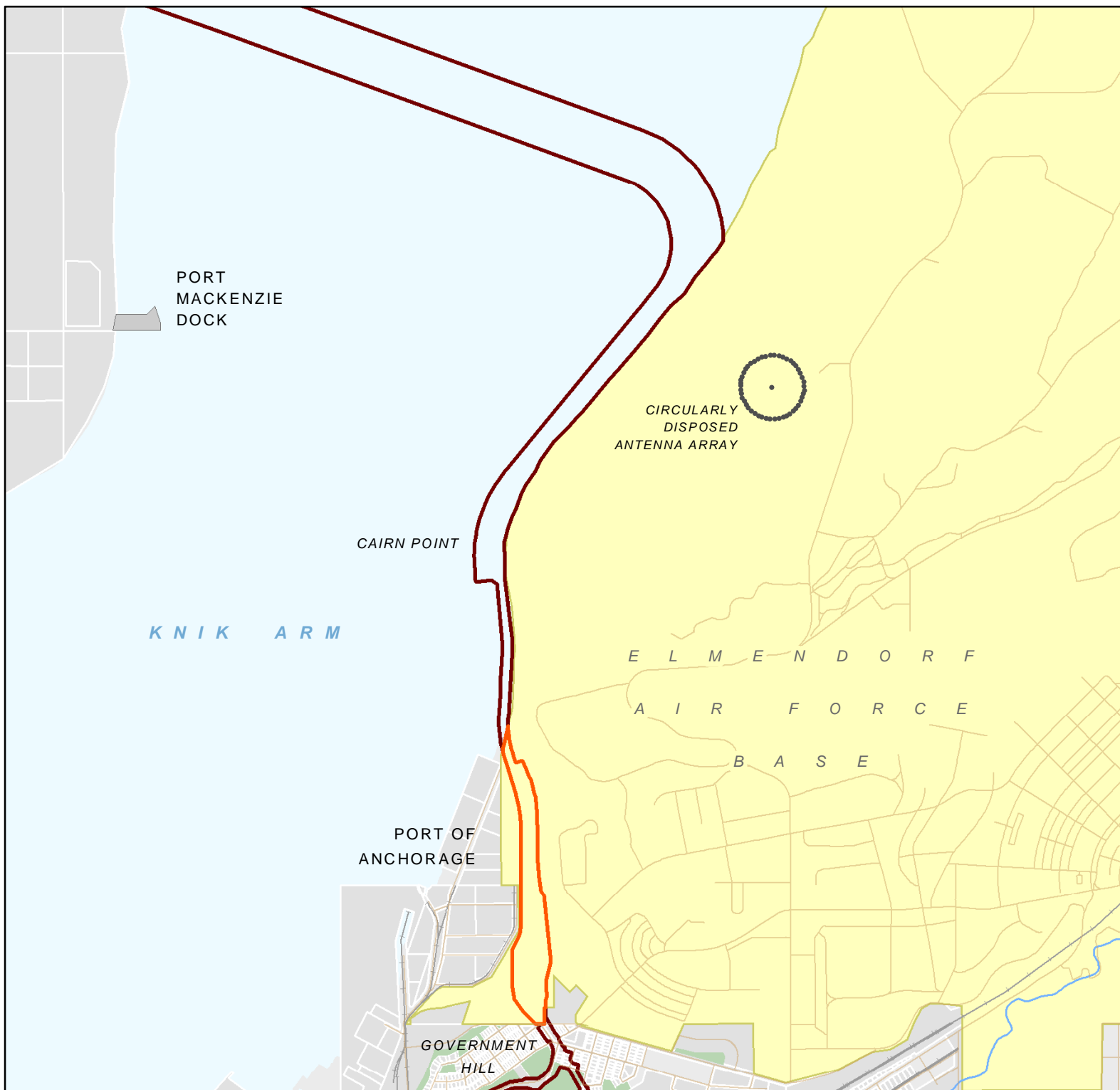
The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These drawings are for review purposes only and are not intended for use in securing permits or for construction purposes.



Map Notes:

Printing Date: March 24, 2008
 Projection Information:
 Name: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
 Datum: North American 1983
 File: AppendixA.mxd
 HDR Alaska, Inc.
 Data Sources: MOA, MSB

0 1,500 3,000 Feet



APPENDIX B

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

NOTIFICATION PROCESS AND STANDARD MITIGATION AGREEMENTS

APPENDIX B
KNIK ARM CROSSING PROJECT
SECTION 106 PROGRAMMATIC AGREEMENT
NOTIFICATION PROCESS AND STANDARD MITIGATION AGREEMENTS

Notification Process

1. Notification letter must come from a consulting party.
2. Notification letter should include the following information:
 - a. Consulting party contact information including telephone number, email, and mailing address.
 - b. Identify the impacted resource (i.e., a historic property, historic district, a property that was previously not considered historic, other).
 - c. Provide a general description of unforeseen impact.
 - d. Explain how the impact different than what is stated in the FEIS.
 - e. Identify the possible cause of the impact (i.e., traffic, noise, newly designated property, other).
 - f. List any additional information or related studies.
3. Send or deliver the notification letter to the KABATA Liaison and the FHWA Alaska Division Administrator:

KABATA Liaison
Knik Arm Bridge and Toll Authority
550 West 7th Avenue
Anchorage, AK 99501-3570

FHWA Alaska Division Administrator
Federal Highway Administration
P.O. Box 21648
709 West 9th Street, Room 851
Juneau, AK 99802-1648

4. Within 30 calendar days of receiving the notification letter, the Liaison shall research the issues listed in the notice, and write a recommendation for the disposition of the request for action by FHWA.
5. The Liaison and FHWA shall consult with the Signatories, Invited Signatory, and appropriate Concurring Parties regarding the notification and appropriate action.
6. Within seven calendar days of receiving the recommendation from the KABATA Liaison, FHWA will take appropriate action and communicate the outcome of their review and decision to all of the Consulting Parties.

Standard Mitigation Categories

The following categories of mitigation options were provided by the State Historic Preservation Officer. The purpose of listing these categories is to assist the Federal Highway Administration and the Consulting Parties of this Programmatic Agreement (PA) over the long term. As noted in PA Stipulation XIV, *Duration*, the PA is in effect

until all measures provided for are completed or until ten years from its execution date. Owing to the longevity of the PA and per Stipulation IX, *Review Protocols*, there is the potential for changed conditions that would require additional or revised mitigation as part of the implementation of the PA prior to Phase 2. As detailed in Stipulation V.D, *Documentation of Implementation using Standard Mitigation Agreements*, a Standard Mitigation Agreement (SMA) will be developed to address any mitigation in Phase 1 or Phase 2 of the KAC Project that is additional mitigation to what has been specifically outlined in the PA.

Any additional mitigation should build on the identification, evaluation, and mitigation measures outlined in the PA. Therefore, standard mitigation categories are listed below. Additional mitigation that falls under one or more of the categories below may be addressed through an SMA with only the affected parties. A template for an SMA is included as an attachment to this Appendix. The following mitigation options may build on the mitigation already provided through the FEIS and Section 106 Processes as well as include options that were discussed during consultation:

- Architectural recordation,
- Historic preservation,
- Relocating historic properties,
- Interpretive signing,
- Preserving sites in place,
- Creative outreach opportunities (uses a variety of products/programs),
- Archaeological data recovery,
- Innovative public archaeology (retention of features, public interpretive materials),
- Alternative uses for historic properties,
- Restoration/rehabilitation of historic properties,
- Neighborhood revitalization,
- Establishing a preservation fund,
- Develop/implement state or local preservation plan components,
- Close information gaps,
- Develop contexts, inventories, resource bases, syntheses,
- Fund museum, exhibitions, and educational curricula.



Knik Arm Crossing Project

STANDARD MITIGATION AGREEMENT (SMA) #

EXECUTION DATE:

Preamble:

Whereas, the following SMA is prepared pursuant to Stipulation Number V.D of the Programmatic Agreement.

Development:

The following SMA was created through consultation with the following participants:

Application:

The following SMA applies to the historic property listed below:

Standard Mitigation Measure:

"[Type details here.]" Include criteria used to determine that the mitigation measure falls under the categories listed above (Appendix C) under Standard Mitigation Categories.

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By:

David Miller, Division Administrator

Date

STATE HISTORIC PRESERVATION OFFICER

By:

Judith Bittner, Alaska SHPO

Date

KNIK ARM BRIDGE AND TOLL AUTHORITY

By:

Andrew Niemiec, Executive Director

APPENDIX C

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

BASE POLICY WHEN ENCOUNTERING HUMAN REMAINS



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

MEMORANDUM FOR DISTRIBUTION A

FROM: 3 WG/CC

11550 Heritage Circle, Suite 200
Elmendorf AFB AK 99506-2850

SUBJECT: Base Policy When Encountering Human Remains

1. This will be a busy construction year with multiple projects occurring on the base, some of which involve areas that were historically used by homesteaders and Alaska Natives. Accordingly, there is a potential for human remains to be found. This memorandum outlines procedures to follow in case bones are discovered.
2. When bones which may possibly be human are discovered during excavation, the project officer or job foreman will immediately stop work in the area and contact the 3rd Security Forces Squadron at 552-4444 (Crime Stoppers) or 911 (EAFB Law Enforcement Desk/Fire Dept.). EAFB Security Forces will establish security for the remains such as limiting access to the site and cordoning off the area. Security Forces will call the base cultural resources manager (CRM) at 552-9677. If the CRM is not available, contact should be made with the 3rd Civil Engineer Squadron Conservation Chief, 552-1609. The CRM will then notify the base archaeologist or State Historic Preservation Office who will determine if the remains are human. Should the remains prove to be human, Security Forces will notify AFOSI and, if the area involves concurrent jurisdiction, the Anchorage Police Department. AFOSI is the sole lead investigative agency for all deaths until any DoD affiliation is determined IAW AFI 71-101, *Criminal Investigations*. When appropriate, AFOSI will notify the Anchorage coroner at 334-2200.
3. If the remains are determined to be modern, law enforcement officials determine when the project activities may resume. If the human remains are not modern and not Alaska Native, the CRM will determine if the discovery site is eligible for the National Register of Historic Places (NRHP). Should the discovery site be eligible as an NRHP, any further work in the area will continue to be restricted and the base CRM will then work with the appropriate Air Force, state, and federal agencies to determine the next course of action.
4. If the human remains are Alaska Native and not modern, the discovery site will continue to have access restriction and the base CRM will again work with the appropriate Air Force, state, and federal agencies to determine the next course of action. Typically, site project excavation activities may proceed 30 days after certification of notification is received by PACAF, or at any time after a written, binding agreement has been executed between EAFB and tribes regarding the removal, treatment, and disposition of the remains.
5. I fully endorse treating with utmost respect the peoples that were here before us and preserving our nation's rich cultural history whenever possible. If you have any questions, please contact the base CRM, Mr. Jon Scudder, 3 CES/CEANC, at 552-9677.

THOMAS W. BERGESON
Colonel, USAF
Commander

APPENDIX D

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

HUMAN REMAINS CONTACTS

APPENDIX D
KNIK ARM CROSSING PROJECT
SECTION 106 PROGRAMMATIC AGREEMENT
HUMAN REMAINS CONTACTS

State Medical Examiner:

Dr. Rob Whitmore, Deputy Chief
4500 S. Boniface Pkwy
Anchorage, Alaska 99508-1264
Phone: (907) 334-2200
Fax: (907) 334-2216

Alaska Bureau of Vital Statistics:

Phillip Mitchell, Section Chief
Supervisor of the Anchorage Bureau
Phone: (907) 465-8643
Fax: (907) 465-4689

Alaska State Troopers, Anchorage:

Alaska Bureau of Investigations.
Sergeant David Hanson
5700 East Tudor
Anchorage, Alaska 99507
Phone: (907) 269-5511
Fax: (907) 248-9834

AST Criminal Investigation Bureau:

Lt. Nils Monsen, Phone:
(907) 745-2131
Investigator Dave Johnson, Phone:
(907) 269-5058

Native Village of Eklutna:

Dorothy Cook, President
26339 Eklutna Village Road
Chugiak, Alaska 99567
Phone: (907) 688-6020
Fax: (907) 688-6021

Knik Tribal Council:

Debra Call, President
P.O. Box 871565
Wasilla, Alaska 99687
Phone: (907) 373-7974
Fax: (907) 373-2161

State Historic Preservation Officer (SHPO):

Judy Bittner
Phone: (907) 269-8721
Fax: (907) 269-8908

Elmendorf Air Force Base Contacts

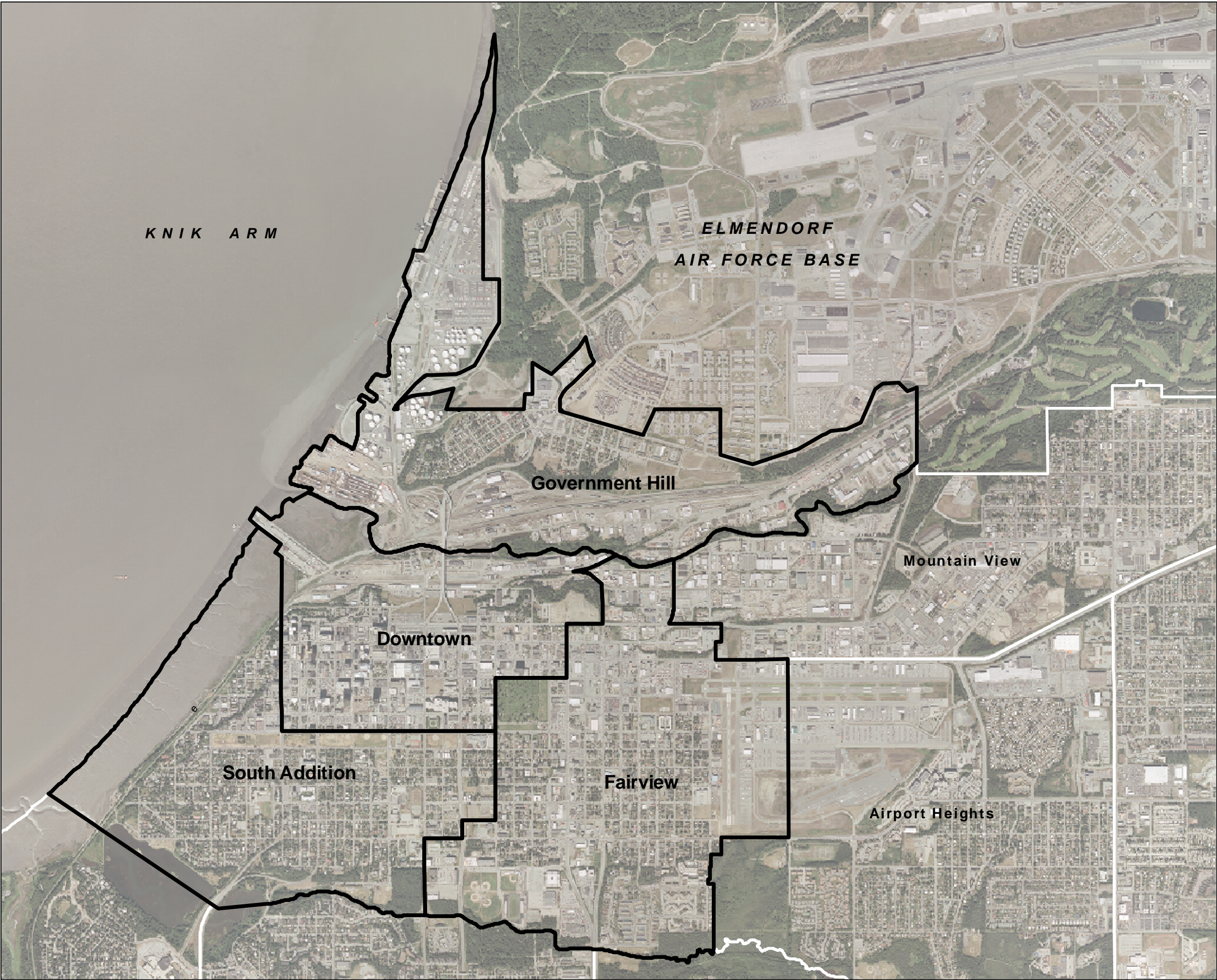
Commander, 3 SFS at (907) 522-4444 (Crime stoppers to secure site)
Cultural Resources Manager (CRM) (907) 552-9677
If not CRM, contact 3 CES Conservation and Planning Chief (907) 522-1609

Knik Arm Bridge and Toll Authority

KABATA Liaison
550 West 7th Avenue
Anchorage, AK 99501-3570


APPENDIX E

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT COMMUNITY COUNCIL DISTRICT BOUNDARIES





Appendix E
Knik Arm Crossing Project
Section 106 Programmatic Agreement
Community Council
District Boundaries

Legend

 Selected Community Councils

Geographic Information Systems (GIS) base data presented on this map is developed and maintained by state and local government agencies and acquired by HDR Alaska, Inc. GIS data is not the official representation of legal data such as property boundaries. In the preparation of this data, HDR attempts to offer the most current correct, and clearly expressed information possible, but there may be inaccuracies in the data.


The information displayed here is for planning purposes only. Base information shown constitutes data from various federal, state, public, and private sources. These drawings are for review purposes only and are not intended for use in securing permits or for construction purposes.



Map Notes:
Printing Date: October 27, 2008
Projection Information:
Name: NAD 1983 StatePlane Alaska 4 FIPS 5004 Feet
Datum: North American 1983
File: CommunityCoun.dls.mxd
HDR Alaska, Inc.

Data Sources: MOA, HDR, SB&A, Aeromap.

0 500 1,000
Feet



APPENDIX F

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

ROLES AND RESPONSIBILITIES

APPENDIX F
KNIK ARM CROSSING PROJECT
SECTION 106 PROGRAMMATIC AGREEMENT
ROLES AND RESPONSIBILITIES

A. Signatories

Consultation for a Programmatic Agreement (PA) involves the federal agency (e.g., FHWA), the ACHP, EAFB, and SHPO. The signatories must sign for the PA to take effect, and their approval also is needed for the PA to be amended or terminated. However, if EAFB and SHPO do not agree to the terms of the PA and terminate consultation, the federal agency and the ACHP may execute the PA without SHPO and EAFB's involvement.

1. Federal Highway Administration (FHWA)

As the lead federal agency official responsible for implementing Section 106 of the National Historic Preservation Act (16 USC 470 outlined in 36 CFR 800) for the Knik Arm Crossing Project, FHWA has the statutory obligation to fulfill the requirements of Section 106, has ultimate approval authority for the undertaking, and has the authority to enforce the terms and conditions of this PA.

2. Advisory Council on Historic Preservation (ACHP)

The ACHP has consulted with and commented to FHWA, as the lead federal agency official on this undertaking, on its effects on historic properties. Under terms of this PA, the ACHP shall have a continuing role in the stipulations set forth in the PA, including the opportunity for the review of architectural recordation forms, cultural resource survey and archaeological monitoring reports, design documents, status reports, and reevaluation efforts as called for under the PA; participating in dispute resolution; and advising the PA signatories of any compliance issues that may be raised by the public to the ACHP. The ACHP shall conduct a site visit every two (2) years through construction of Phase 1 or through the first five years of construction, whichever benchmark occurs sooner, to monitor implementation of the PA stipulations.

3. Elmendorf Air Force Base (EAFB)

The proposed KAC Project will require a relatively small parcel of land acquisition from EAFB along their western bluff boundary. Being a federal agency, land manager, and Section 106 consulting party, EAFB will have permitting authority and right-of-way approval actions that trigger Section 110 and 106 responsibilities, as set forth in the NHPA. As the federal managing landowner, EAFB may use the terms of this PA to meet their Section 106 obligations and is participating as a Signatory whose authority under this PA pertains to their permitting jurisdiction with the right to amend or terminate the PA. EAFB will consult with FHWA as the lead federal

agency to satisfy the collective Section 106 requirements for both agencies. KABATA will coordinate with EAFB in the coordination of the cultural resource survey and archaeological monitoring at EAFB.

4. State Historic Preservation Officer (SHPO)

SHPO serves in accordance with Section 106 and the State's historic preservation program to reflect the interests of the State and its citizens in the preservation of their cultural heritage. Under terms of this PA, SHPO shall advise and assist FHWA and KABATA in carrying out their responsibilities, including the coordination of cultural resource surveys at EAFB, the review of architectural recordation forms, cultural resource survey and archaeological monitoring reports, design documents, status reports, and reevaluation efforts as called for under the PA; participate in the development of the Government Hill Neighborhood Plan; and monitor the impacts of measures to resolve adverse effects on historic properties. SHPO will provide recommendations on the selection of the KABATA Liaison.

B. Invited Signatory

FHWA has invited KABATA to be an Invited Signatory. The refusal of an invited signatory to sign does not prevent the PA from taking effect. Under the terms of this PA, KABATA has the authority to amend or terminate the PA with the notification and concurrence of the Signatories.

1. Knik Arm Bridge and Toll Authority (KABATA)

As the project sponsor for this undertaking, as well as having served as a source of information and documentation regarding the KAC Project, KABATA, shall continue to perform the planning and design of the project and shall have the principal responsibility for implementing the Stipulations of the PA. These responsibilities include the preparation oversight of architectural recordation forms, cultural resource survey and archaeological monitoring reports, design documents, status reports, and reassessment efforts as called for under the PA, including the resolution of adverse effects documented in the PA and the preparation of design submissions which will be the subject of further coordination and review under this PA. On behalf of FHWA, KABATA will provide a Liaison to work with all Section 106 consulting parties. In addition, KABATA will provide funding for a cultural heritage staff position to the Tribes for up to two years, and continue to work with the Tribes to acquire land for a replacement fish camp site.

APPENDIX G

KNIK ARM CROSSING PROJECT SECTION 106 PROGRAMMATIC AGREEMENT

ACRONYMS AND ABBREVIATIONS

APPENDIX G
KNIK ARM CROSSING PROJECT
SECTION 106 PROGRAMMATIC AGREEMENT
ACRONYMS AND ABBREVIATIONS

AAHP	Alaska Association for Historic Preservation
ACHP	Advisory Council on Historic Preservation
AHPC	Anchorage Historic Preservation Commission
AHPI	Anchorage Historic Properties, Inc.
AHRS	Alaska Heritage Resources Survey
AMATS	Anchorage Metropolitan Area Transportation Solutions
ANCSA	Alaska Native Claims Settlement Act
APE	Area of Potential Effect
AST	Alaska State Troopers
CFR	Code of Federal Regulations
CLG	Certified Local Government
CSM	Context Sensitive Mitigation
DEIS	Draft Environmental Impact Statement
EAFB	Elmendorf Air Force Base
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
GHCC	Government Hill Community Council
GIS	Geographic Information System
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
KABATA	Knik Arm Bridge and Toll Authority
KABATA Liaison	KABATA Staff Liaison
KAC	Knik Arm Crossing
Keeper	Keeper of the National Register
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSB	Matanuska-Susitna Borough
Municipality	Municipality of Anchorage
NAGPRA	Native American Graves Protection and Repatriation Act
NHPA	National Historic Preservation Act
NR/National Register	National Register of Historic Places
Neighborhood Plan	Government Hill Neighborhood Plan
NEPA	National Environmental Policy Act
NPS	National Park Service
OHA	Office of History and Archaeology
PA	Programmatic Agreement
ROD	Record of Decision
SHPO	State Historic Preservation Officer
SME	State Medical Examiner
SMA	Standard Mitigation Agreement

Knik Arm Crossing Project

Memorandums of Understanding Implementing a Section 106 Programmatic Agreement

Knik Arm Crossing Project

Memorandum of Understanding Implementing a Section 106 Programmatic Agreement for the

Alaska State Historic Preservation Officer



Knik Arm Crossing Project
MEMORANDUM OF UNDERSTANDING
Implementing a Section 106 Programmatic Agreement for the
Alaska State Historic Preservation Officer

WHEREAS, the purpose of this Memorandum of Understanding, (herein MOU), is to implement Stipulation IV.A.1.b of the Knik Arm Crossing (herein KAC) Project Programmatic Agreement (herein PA), executed December 29, 2008, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470), (herein NHPA), and its implementing regulations (36 CFR Part 800), and to establish the respective responsibilities and commitments of the parties for such implementation; and

WHEREAS, this MOU is entered into under the authority of the NHPA, as amended, 16 USC 470 *et. seq* and the National Environmental Policy Act of 1969, as amended, 42 USC 4321 *et. Seq*, (herein NEPA); and

WHEREAS, the Federal Highway Administration, (herein FHWA), Alaska Division Administrator is the "Agency Official" responsible for compliance with Section 106 of NHPA (16 USC 470) and its implementing regulations (36 CFR 800);

NOW, THEREFORE, the FHWA and the State Historic Preservation Officer for the State of Alaska, (herein SHPO), hereby promise and agree by and between each other as follows:

1. GENERAL

The parties shall cooperate in providing Geographic Information System (GIS) and the Alaska Heritage Resource Survey (AHRS) site data entry support to Matanuska-Susitna Borough (MSB) (herein AHRS Database Support). This AHRS Database Support effort is a component of the *MSB Historic Preservation Plan Field Verification Project* (PA Stipulation IV.A.1.a).

- (A) SHPO will update the AHRS database for areas identified by the *Knik Arm Bridge and Toll Authority [KABATA] Historic Preservation Plan for Portions of the Matanuska-Susitna Borough* (January 31, 2008) by reviewing existing AHRS records and cultural resource reports and using this information to update existing or creating new AHRS records.
- (B) MSB will conduct field studies for two (2) years (in accordance with PA Stipulation IV.A.1.a). Upon receipt of each MSB field season survey data, SHPO will enter existing and new MSB data and provide the updated GIS and AHRS information to MSB.



- (C) The AHRS Database Support will provide computer programming services for the AHRS Oracle electronic mapping program for developing functions for exporting/importing GIS shape files.

2. SPECIFIC DUTIES AND RESPONSIBILITIES

In addition to all other promises and agreements in this MOU, the specific duties and responsibilities of the parties shall be as follows:

(A) The FHWA shall:

- (1) Provide funding in the amount of \$120,976.00 to the SHPO for AHRS Database Support. The FHWA funding will be provided through a Reimbursable Service Agreement (RSA). The funding will be used by SHPO in accordance to the requirements of Section 3.2 of this MOU.
- (2) Consult and collaborate with the SHPO and MSB throughout the completion of the updated data entry.
- (3) Immediately after execution of this MOU, post this MOU on the KAC Project Website for public review to demonstrate how federal funding will be used to develop cultural resource inventories and electronic mapping capabilities that support MSB historic preservation planning efforts related to Phases 1 and 2 of the KAC Project.

(B) The SHPO shall:

- (1) Consult and collaborate with the FHWA and MSB throughout the preparation and implementation of the *MSB Field Verification Project*.
- (2) Review all existing AHRS records and cultural resource reports within the area identified by the *KABATA Historic Preservation Plan for the Portions of the Matanuska-Susitna Borough* (January 31, 2008) to update AHRS records and provide that information to MSB within one (1) year of signing the RSA.
- (3) Enter new site information and complete AHRS data entry within one (1) year of receipt of updated site information from MSB field work and research data, and provide the updated AHRS records to MSB.
- (4) Provide computer programming services to develop export/import GIS electronic mapping functions for point, polygon and linear shape files within the AHRS Oracle database system.



- (5) Provide AHRS records as point, polygon and linear GIS shape files to MSB once the exporting/importing capabilities have been developed, within one and a half (1.5) years of signing the RSA.

3. SCOPES OF WORK

(A) Purpose.

Due to early mapping technology the AHRS database contains inaccurate location information; the database also stores site locations as single points. The AHRS data is being developed and transferred into a new electronic mapping program that uses shape files. The purpose of the AHRS Database Support is to provide new AHRS records, update existing AHRS records and creating AHRS shape files, thus providing MSB with the best available data for their development of management “tools” that will guide future land use, historic preservation and development in areas under their jurisdiction.

(B) Specific Scope of Work

- (1) **Meetings:** Meetings to occur under this task correspond with the meetings of the *MSB Field Verification Project* and include: SHPO shall meet with MSB to consult on the AHRS records for existing sites (listed since the *KABATA Historic Preservation Plan* was written) in regions slated to be surveyed.
- (2) **AHRS Database Update and Entry**
 - a. SHPO shall determine if existing AHRS records in areas identified by the *KABATA Historic Preservation Plan* need updating or if new AHRS records need to be created. SHPO shall update the AHRS records accordingly and provide that information to MSB.
 - b. SHPO shall review existing site location data and determine if AHRS database sites that are currently represented as single point only data need to be mapped as polygons or linear feature shape files. Site records and shape files will be created, entered and/or updated as needed.
 - c. SHPO shall review annual reports from the *MSB Historic Preservation Plan Field Inventory Verification Project* and update the AHRS database accordingly.
 - d. SHPO shall coordinate with the MSB GIS Manager, who will supervise all transfers of data from the AHRS database to the MSB GIS mapping system and inventory.



(3) Development of Oracle Export/Import Functions

- a. SHPO will provide computer programming services, contracted through the Division of Natural Resources Land Records Information Services GIS Section, to develop the AHRS Oracle export/import GIS functions that establish the shape files for the new electronic mapping program (*AHRS Mapping Editor*).
- b. SHPO shall coordinate with the MSB GIS Manager, who will supervise all transfers of data from the AHRS database to the MSB GIS mapping system and inventory.

(4) Deliverables/Reporting

- a. AHRS information will be provided to MSB as single point provenience data until programs for exporting/importing shape files has been completed. Once the exporting/importing program has been completed, and within one and a half (1.5) years of signing the RSA, AHRS information will be provided in point, polygon and linear shape files. AHRS information previously submitted as single point provenience data will be resubmitted as point, polygon and linear shape files.
- b. SHPO shall provide updated AHRS information to MSB for their GIS mapping system and inventory within one (1) year of signing the RSA. Upon completion of each field season of the MSB Field Verification Project, and within one (1) year of receipt of field survey data, SHPO shall provide updated AHRS information to MSB for their GIS mapping system and inventory.
- c. SHPO shall coordinate with MSB on presentations of MSB GIS project results to FHWA, KABATA Liaison, Tribes, and other interested consulting parties.
- d. SHPO shall provide an annual progress report to the KABATA Liaison for the duration of the three year project.
- e. SHPO will provide a summary of the results of the AHRS update at the end of the project.



(5) Management

- a. SHPO shall provide day to day management of AHRS Database Support tasks.
- b. SHPO is responsible for financial management as outlined in 49 CFR 18.20.
- c. SHPO is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44.

(6) Administrative Requirements

SHPO shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

(7) Qualifications

- a. Office of History and Archaeology (OHA) staff involved in AHRS Database Support must meet the Secretary of Interior Professional Qualification Standards or be under the direct supervision of someone who meets such standards.
- b. All financial reports shall be submitted by OHA financial accounting offices.

(8) Budget

The RSA budget contained in Appendix A has a three (3)-year duration. For each year, the budget provides for a period equivalent to six (6) months of contractual services.

4. MONITORING, MODIFICATION, CONSISTENCY WITH THE PA, AND TERMINATION.

- (A) Monitoring. The FHWA may monitor any activities carried out pursuant to this agreement. The SHPO will cooperate with the FHWA in carrying out these monitoring and review responsibilities.
- (B) Amendments. Any party to this agreement may request that it be amended.
- (C) Termination. Subject to the payment provisions of the Funding Payment Schedule, any party to this agreement may terminate it by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to the



termination to seek agreements on amendments or other actions that would avoid termination.

- (D) Wherever this MOU contradicts or is inconsistent with the PA, the provisions of the PA shall govern exclusively and such contradiction or inconsistency shall have no force or effect.

5. FUNDING PAYMENTS.

The SHPO shall receive payments from the funding provided by FHWA as follows:

- (A) Payments shall be made in quarterly progress payments equal to a percent of the aggregate funding provided calculated by utilizing the aggregate percentage of completion of the AHRS Database Support.
- (B) Notwithstanding subparagraph 6(a) above, the first quarterly payment shall be made as soon as possible after the effective date of this MOU in an amount equal to one-eighth of the aggregate total funding provided for the AHRS Database Support.
- (C) All payments, except the initial payment provided for in subparagraph 6(b), shall be made only on the request of the SHPO, to be provided to KABATA and FHWA on or before the 15th day of the third month of the calendar quarter after the initial payment in subparagraph 6(b) is made.
- (D) Progress payments shall be subject to and payable only upon the review and approval of the progress reports by KABATA's Liaison Officer and such FHWA Division personnel as the latter may direct.
- (E) Separate progress reports shall be provided for the AHRS Database Support on or before the 15th day of the last month of each calendar quarter, beginning in the first full calendar quarter after the effective date of this MOU. Progress reports reviewed and approved by KABATA's Liaison Officer shall be a condition precedent to any payment of funds to the MOA.
- (F) Should this agreement be terminated prior to the completion of any one or more components of the AHRS Database Support, all progress payments shall cease except for an amount equal to a percentage of completion prior to termination that has not been previously paid.
- (G) If KABATA's Liaison Officer or the designee of the FHWA determines that insufficient progress has been made, or that the work performed is unsatisfactory, the KABATA Liaison Officer in coordination with the designee of FHWA shall advise the SHPO of the deficiency and the actions the SHPO may take to correct the deficiency, to an extent the work may be included in the next progress payment.



Appendix A: Budget

Personal Services

Archaeologist I: 6 months	\$42,000
Archaeologist II: 2 months	<u>\$20,000</u>
Subtotal	\$62,000
Approved Indirect Rate @ 4.8%	\$2,976
Total Personal Services:	\$64,976

Contractual Services

Computer Programming	\$55,000
Commodities	<u>\$1,000</u>
Subtotal	\$56,000
TOTAL	\$120,976



KAGATA

KNIK ARM CROSSING

DOT&PF



SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By:

David Miller
David Miller, Division Administrator

28 July, 2009
Date

STATE HISTORIC PRESERVATION OFFICER

By:

J. Paul McMahon, deputy
For Judith Bittner, Alaska SHPO

7/28/09
Date

Knik Arm Crossing Project

Memorandum of Understanding Implementing a Section 106 Programmatic Agreement for the

Knik Tribal Council



Knik Arm Crossing Project
MEMORANDUM OF UNDERSTANDING
Implementing the Knik Arm Crossing Section 106 Programmatic
Agreement for the
Knik Tribal Council

WHEREAS, the purpose of this Memorandum of Understanding, (herein MOU), is to implement Stipulations IV.A.2.a and V.A of the Knik Arm Crossing (herein KAC) Project Programmatic Agreement, herein PA, executed December 29, 2008, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470), herein NHPA, and its implementing regulations (36 CFR Part 800), and to establish the respective responsibilities and commitments of the parties for such implementation; and

WHEREAS, this MOU is entered into under the authority of the NHPA, as amended, 16 USC 470 *et. seq* and the National Environmental Policy Act of 1969, as amended, 42 USC 4321 *et. Seq*, herein NEPA; and

WHEREAS, the Federal Highways Administration, herein FHWA, Alaska Division Administrator is the “Agency Official” responsible for compliance with Section 106 of NHPA (16 USC 470) and its implementing regulations (36 CFR 800);

NOW, THEREFORE, the FHWA, the State Historic Preservation Officer for the State of Alaska, (herein SHPO), the Knik Tribal Council (herein KTC) hereby promise and agree by and between each other as follows:

1. GENERAL

The parties shall cooperate in the funding of one Half-time (.5FTE) Tribal Cultural Resources Staff Position (herein Position) to assist KTC in the research, interviews and documentation of resources of traditional religious and cultural significance to the Tribes for the purpose of collaboration with the Matanuska-Susitna Borough’s (herein MSB) field test verification effort of the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough (January 31, 2008)*, hereinafter Field Verification Project.

- (A) The funding will assist KTC in efforts to inform and assist MSB in development of historic preservation planning and management “tools” that will guide future land use, historic preservation, and development in areas under their jurisdiction.
- (B) All parties shall work together to monitor activities of the Position, and at the finalization of these activities shall evaluate the effectiveness of these activities and submit a report thereof to all parties.



2. SPECIFIC DUTIES AND RESPONSIBILITIES

In addition to all other promises and agreements in this MOU, the specific duties and responsibilities of the parties shall be as follows:

(A) The FHWA shall:

- (1) Provide funding in the amount of \$107,636.96 to the KTC to hire and fund one (1) **.5 FTE** Position plus costs to support, supplement and manage the Position for a period not to exceed two (2) years;
- (2) Consult and collaborate with the SHPO, MSB, and KTC throughout the hiring and two (2) year employment period of the Position;
- (3) Once executed, FHWA will post this MOU on the KAC Project Website for public review, in order to demonstrate how the funding will be used to develop preservation plans related to Phases 1 and 2 of the KAC Project.

(B) The SHPO shall:

- (1) Consult with the FHWA, and KTC throughout the hiring and two (2) year employment period of the Tribal Cultural Resources Staff Position;
- (2) Provide resource support to the Tribal Cultural Resources Staff Position, as requested;

(C) The KTC shall:

- (1) Implement the attached joint scope of work that has been developed in consultation with FHWA and SHPO
- (2) Collaborate with the MSB's Field Test Verification Project;
- (3) Provide day-to-day operational support for the Position;
- (4) Provide semi-annual reports regarding the Position activities to the Knik Arm Bridge and Toll Authority (herein KABATA) Liaison;
- (5) Comply with FHWA administrative requirements as included in 49 CFR 18.

3. SCOPES OF WORK

(A) **Funding for Joint KTC Tribal Cultural Resources Staff Position.**

- (1) **Purpose.** The purpose of this MOU is to fund one half-time Tribal Cultural Resources Staff Position to assist KTC by conducting research, interviewing Elders, and documenting properties of traditional religious and cultural significance and other cultural resources important to the



Tribes for the purpose of collaboration with MSB's field test verification effort.

- (2) **Guiding Principle.** The Position shall address documentation of sites of traditional, Cultural, and religious significance for historic preservation efforts that will guide future growth and development.

(3) **Specific Scope of Work**

(a) **Meetings**

Meetings to occur under this task shall include:

- KTC and FHWA to review scope of work and schedule, and develop Position announcement
- Ongoing meetings to discuss the Position
- KTC to present results of the work conducted by the Position in support of the MSB Field Verification Project to other interested consulting parties.
- At the end of each year KTC shall meet with MSB to obtain the present results of research and field work to SHPO, Tribes, and other interested parties.

(b) **Position Tasks**

A list of tasks that will need to be carried out as part of development of oral history studies and other tasks to be conducted under the Position funding, which could include:

- Conducting oral history studies.
- Conducting research and documentation of properties of traditional cultural and religious significance and historic resources important to the Tribes for the purpose of collaboration with the MSB Field Verification Project
- Supplying to MSB provisions for the preservation and management of sites of traditional, cultural, and religious significance to the Tribes.
- Providing to MSB recommendations on how to best address aspects of future growth and development in the MSB

(c) **Deliverables/Reporting**

Deliverables that will need to be submitted as part of development of the Tribal Cultural Resources Staff Position include:

- Semi-annual progress report to the KABATA Liaison
- Select project results/presentation for public dissemination
- Presentation of results to other interested consulting parties



(d) Management

The KTC regarding management responsibilities of the Position shall include:

- The KTC shall provide day to day management of Tribal Cultural Resources Staff Position activities
- The KTC are responsible for financial management as outlined in 49 CFR 18.20
- The KTC are responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44

(e) Administrative Requirements

The KTC shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

(f) Schedule

The schedule for tasks to be carried out under this MOU. No schedule for completion of Tribal Cultural Resources Staff Position projects or reports was stipulated in the PA; however, a schedule was developed and included here, both for hiring of the Position and for proposed reports generated by the Position.

- After completion/signing of the MOU, KTC plans to advertise and recruit for the Tribal Cultural Resources Staff Position
- Tribal Cultural Resources Staff position will work closely and cooperatively with MSB, KABATA, FHWA and KTC on the proposed scheduled project
- The Tribal Cultural Resource Staff shall report to FHWA and KABATA on a bi-annual bases

(h) Budget

Attached Budget Appendix 1 and Appendix 2 provide complete budget details.

4. COOPERATIVE PROCEDURES

- (A) One representative of each party to this MOU will be invited to serve as a participating member of the Tribal Cultural Resources Staff Position Committee (herein Committee).



- (B) Members of the Committee will meet as necessary to review and discuss items needing the Committee's attention.

5. MONITORING, MODIFICATION, CONSISTENCY WITH THE PA, AND TERMINATION.

- (A) Monitoring. The FHWA may monitor any activities carried out pursuant to this agreement.
- (B) Amendments. Any party to this agreement may request that it be amended.
- (C) Termination. Subject to the payment provisions of the Funding Payment Schedule, any party to this agreement may terminate it by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to the termination to seek agreements on amendments or other actions that would avoid termination.
- (D) Wherever this MOU contradicts or is inconsistent with the PA, the provisions of the PA shall govern exclusively and such contradiction or inconsistency shall have no force or effect.

6. FUNDING PAYMENTS.

KTC shall receive payments from the funding provided by FHWA as follows:

- (A) Payments shall be made in quarterly progress payments equal to a percent of the aggregate funding provided calculated by utilizing the aggregate percentage of completion of the two-year Position.
- (B) Notwithstanding subparagraph 6(a) above, the first quarterly payment shall be made as soon as possible after the effective date of this MOU in an amount equal to one-eighth of the aggregate total funding provided for the Position, for the purpose of providing start-up funds for commencement of hiring and initial start-up.
- (C) All payments except the initial payment provided for in subparagraph 6(b) shall be made only on the request of the KTC, provided to KABATA and FHWA on or before the 15th day of the third month of the calendar quarter and only at the end each calendar quarter beginning in the first calendar quarter after the calendar quarter in which the initial payment in subparagraph 6(b) above is made.
- (D) Progress payments shall be subject to and payable only upon the review and approval of the progress reports by the KABATA Liaison and such FHWA Division personnel as the latter may direct.



- (E) Separate progress reports shall be provided for the Position on or before the 15th day of the last month of each calendar quarter, beginning in the first full calendar quarter after the effective date of this MOU. Progress reports reviewed and approved by the KABATA Liaison shall be a condition precedent to any payment of funds to the KTC.
- (F) Should this agreement be terminated prior to the completion of the two-year funding period for the Position, all progress payments shall cease except for an amount equal to a percentage of completion prior to termination that has not been previously paid.
- (G) If the KABATA Liaison or the designee of the FHWA determines that insufficient progress has been made or that the work performed is unsatisfactory, the KABATA Liaison in coordination with the designee of FHWA shall advise the KTC of the deficiency and the actions the KTC may take to correct the deficiency to an extent the work may be included in the next progress payment.



SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By: David Miller 6-25-09
David Miller, Division Administrator Date

STATE HISTORIC PRESERVATION OFFICER

By: Judith Bittner 7-1-09
Judith Bittner, Alaska SHPO Date

KNIK TRIBAL COUNCIL

By: Debra Call 6/6/09
Debra Call, President Date

Appendix I
Knik Tribal Council
KABATA Cultural Resource Preservation Project
Budget Table
Two Year Project

PERSONNEL		\$ 54,080.00
Tribal Cultural Resources Staff Position	\$54,080	
FRINGE BENEFITS @ 38%		\$ 20,550.40
TRAVEL		\$ -
SUPPLIES		\$ 4,000.00
General office	\$1,000	
Computer	\$2,500	
Desk and Chair	\$500	
EQUIPMENT		\$ -
OTHER		\$ 4,180.00
Telephone / teleconference / Internet	\$480	
Space and meeting room	\$500	
Knik Tribal Members stipends	\$2,500	
Reproduction/Printing/Postage	\$300	
Office Maintenance	\$400	
TOTAL DIRECT CHARGES		\$ 82,810.40
TOTAL INDIRECT CHARGES @ 29.98%		\$ 24,826.56
TOTAL PROGRAM COST		\$ 107,636.96

* not included in indirect charges

Appendix 2

Knik Tribal Council KABATA Cultural Preservation Project

Budget Narrative Justification

PERSONNEL	\$ 54,080.00
Tribal Cultural Resources Staff Position	
<i>.5 FTE (Half Time for two years) to manage all KABATA funded activities, report activity to management and Council, located at main Tribal office, reporting to the Housing Director.</i>	
20 hrs a week @ \$26 Hr for 104 weeks (2 years) =	
FRINGE BENEFITS @ 38%	\$ 20550.40
<i>A full package of benefits is provided to KTC employees. This includes medical, dental, vision, disability and life insurance; Worker's Compensation insurance and contributions to a portable retirement plan. The present aggregate fringe breakdown is as follows: Soc. sec. + federal med. = 7.65, ESC = 1.65, 401K = 6%, 401K match = 2%, medical = 14.2%, life + other = 3.5%</i>	
TRAVEL	\$ 0.00
SUPPLIES	\$ 4,000.00
General office Consumables	
<i>For project related supplies; paper \$200; ink \$200; pens, pencils, markers, receptacles \$100; folders, binders CDs and CD case \$100; \$400 for spiral binders and other supplies for publishing.</i>	
	\$1,000
Computer	
<i>GIS Computer with special specifications.</i>	\$2,500
Desk and Chair	\$500
EQUIPMENT	\$ 0
OTHER	\$ 4,180.00
Telephone / teleconference / Internet	
<i>Specific charges based on similar KTC program use.</i>	
<i>Cost estimated @ 20 per month *24 months.</i>	\$480

Space and Meeting Room Rental		
Charges will be collected from the program for holding stakeholder meeting.	\$500	
Knik Tribal Membership Stipends/Interview Fees		
Stipends/interview Fees 50 interviews \$50 Stipend per interview	\$2,500	
Reproduction/Printing/Postage		
	\$300	
Office Maintenance Electricity/Natural Gas/Building maintenance		
<i>\$ 400 per month for CPPC office space maintenance based on shared cost of other KTC programs.</i>	\$1200	
TOTAL DIRECT CHARGES	\$	82,810.40
TOTAL INDIRECT CHARGES @ 29.98%	\$	24,826.56
GRAND TOTAL	\$	107,636.96

KTC has an Indirect Cost Rate negotiated with the U.S. Department of the Interior. The present rate structure provides for no administrative cost on contractual items and 29.98% for all other cost categories. This charge pays for administrative salaries and benefits, audit services, equipment rental, supplies and other expenses related to the operation of the organization as a whole. A copy of the Indirect Cost Rate Agreement is included in the Appendix.

Knik Arm Crossing Project

**Memorandum of Understanding Implementing a Section 106 Programmatic Agreement for the
Native Village of Eklutna**



Knik Arm Crossing Project
MEMORANDUM OF UNDERSTANDING
Implementing the Knik Arm Crossing Section 106 Programmatic
Agreement for the
Native Village of Eklutna

WHEREAS, the purpose of this Memorandum of Understanding, (herein MOU), is to implement Stipulations IV.A.2.a and V.A of the Knik Arm Crossing (herein KAC) Project Programmatic Agreement, herein PA, executed December 29, 2008, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470), herein NHPA, and its implementing regulations (36 CFR Part 800), and to establish the respective responsibilities and commitments of the parties for such implementation; and

WHEREAS, this MOU is entered into under the authority of the NHPA, as amended, 16 USC 470 *et. seq* and the National Environmental Policy Act of 1969, as amended, 42 USC 4321 *et. Seq*, herein NEPA; and

WHEREAS, the Federal Highways Administration, herein FHWA, Alaska Division Administrator is the "Agency Official" responsible for compliance with Section 106 of NHPA (16 USC 470) and its implementing regulations (36 CFR 800);

NOW, THEREFORE, the FHWA, the State Historic Preservation Officer for the State of Alaska, (herein SHPO), the Native Village of Eklutna (herein NVE) hereby promise and agree by and between each other as follows:

1. GENERAL

The parties shall cooperate in the funding of one Half-time (.5FTE) Tribal Cultural Resources Staff Position (herein Position) to assist NVE in the research, interviews and documentation of resources of traditional religious and cultural significance to the Tribes for the purpose of collaboration with the Matanuska-Susitna Borough's (herein MSB) field test verification effort of the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough (January 31, 2008)*, hereinafter Field Verification Project.

- (A) The funding will assist NVE in efforts to inform and assist MSB in development of historic preservation planning and management "tools" that will guide future land use, historic preservation, and development in areas under their jurisdiction.
- (B) All parties shall work together to monitor activities of the Position, and at the finalization of these activities shall evaluate the effectiveness of these activities and submit a report thereof to all parties.



2. SPECIFIC DUTIES AND RESPONSIBILITIES

In addition to all other promises and agreements in this MOU, the specific duties and responsibilities of the parties shall be as follows:

- (A) The FHWA shall:
 - (1) Provide funding in the amount of \$107,636.96 to the NVE to hire and fund one (1) **.5 FTE** Position plus costs to support, supplement and manage the Position for a period not to exceed two (2) years;
 - (2) Consult and collaborate with the SHPO, MSB, and NVE throughout the hiring and two (2) year employment period of the Position;
 - (3) Once executed, FHWA will post this MOU on the KAC Project Website for public review, in order to demonstrate how the funding will be used to develop preservation plans related to Phases 1 and 2 of the KAC Project.
- (B) The SHPO shall:
 - (1) Consult with the FHWA, and NVE throughout the hiring and two (2) year employment period of the Tribal Cultural Resources Staff Position;
 - (2) Provide resource support to the Tribal Cultural Resources Staff Position, as requested;
- (C) The NVE shall:
 - (1) Implement the attached joint scope of work that has been developed in consultation with FHWA and SHPO
 - (2) Collaborate with the MSB's Field Test Verification Project;
 - (3) Provide day-to-day operational support for the Position;
 - (4) Provide semi-annual reports regarding the Position activities to the Knik Arm Bridge and Toll Authority (herein KABATA) Liaison;
 - (5) Comply with FHWA administrative requirements as included in 49 CFR 18.

3. SCOPES OF WORK

(A) Funding for Joint NVE Tribal Cultural Resources Staff Position.

- (1) **Purpose.** The purpose of this MOU is to fund one half-time Tribal Cultural Resources Staff Position to assist NVE by conducting research, interviewing Elders, and documenting properties of traditional religious and cultural significance and other cultural resources important to the



Tribes for the purpose of collaboration with MSB's field test verification effort.

- (2) **Guiding Principle.** The Position shall address documentation of sites of traditional, Cultural, and religious significance for historic preservation efforts that will guide future growth and development.

(3) **Specific Scope of Work**

(a) **Meetings**

Meetings to occur under this task shall include:

- NVE and FHWA to review scope of work and schedule, and develop Position announcement
- Ongoing meetings to discuss the Position
- NVE to present results of the work conducted by the Position in support of the MSB Field Verification Project to other interested consulting parties.
- At the end of each year NVE shall meet with MSB to obtain the present results of research and field work to SHPO, Tribes, and other interested parties.

(b) **Position Tasks**

A list of tasks that will need to be carried out as part of development of oral history studies and other tasks to be conducted under the Position funding, which could include:

- Conducting oral history studies.
- Conducting research and documentation of properties of traditional cultural and religious significance and historic resources important to the Tribes for the purpose of collaboration with the MSB Field Verification Project
- Supplying to MSB provisions for the preservation and management of sites of traditional, cultural, and religious significance to the Tribes.
- Providing to MSB recommendations on how to best address aspects of future growth and development in the MSB

(c) **Deliverables/Reporting**

Deliverables that will need to be submitted as part of development of the Tribal Cultural Resources Staff Position include:

- Semi-annual progress report to the KABATA Liaison
- Select project results/presentation for public dissemination
- Presentation of results to other interested consulting parties



(d) Management

The NVE regarding management responsibilities of the Position shall include:

- The NVE shall provide day to day management of Tribal Cultural Resources Staff Position activities
- The NVE are responsible for financial management as outlined in 49 CFR 18.20
- The NVE are responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44

(e) Administrative Requirements

The NVE shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

(f) Schedule

The schedule for tasks to be carried out under this MOU. No schedule for completion of Tribal Cultural Resources Staff Position projects or reports was stipulated in the PA; however, a schedule was developed and included here, both for hiring of the Position and for proposed reports generated by the Position.

- After completion/signing of the MOU, NVE plans to advertise and recruit for the Tribal Cultural Resources Staff Position
- Tribal Cultural Resources Staff position will work closely and cooperatively with MSB, KABATA, FHWA and NVE on the proposed scheduled project
- The Tribal Cultural Resource Staff shall report to FHWA and KABATA on a bi-annual bases

(h) Budget

Attached Budget Appendix 1 and Appendix 2 provide complete budget details.

4. COOPERATIVE PROCEDURES

- (A) One representative of each party to this MOU will be invited to serve as a participating member of the Tribal Cultural Resources Staff Position Committee (herein Committee).



- (B) Members of the Committee will meet as necessary to review and discuss items needing the Committee's attention.

5. MONITORING, MODIFICATION, CONSISTENCY WITH THE PA, AND TERMINATION.

- (A) Monitoring. The FHWA may monitor any activities carried out pursuant to this agreement.
- (B) Amendments. Any party to this agreement may request that it be amended.
- (C) Termination. Subject to the payment provisions of the Funding Payment Schedule, any party to this agreement may terminate it by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to the termination to seek agreements on amendments or other actions that would avoid termination.
- (D) Wherever this MOU contradicts or is inconsistent with the PA, the provisions of the PA shall govern exclusively and such contradiction or inconsistency shall have no force or effect.

6. FUNDING PAYMENTS.

NVE shall receive payments from the funding provided by FHWA as follows:

- (A) Payments shall be made in quarterly progress payments equal to a percent of the aggregate funding provided calculated by utilizing the aggregate percentage of completion of the two-year Position.
- (B) Notwithstanding subparagraph 6(a) above, the first quarterly payment shall be made as soon as possible after the effective date of this MOU in an amount equal to one-eighth of the aggregate total funding provided for the Position, for the purpose of providing start-up funds for commencement of hiring and initial start-up.
- (C) All payments except the initial payment provided for in subparagraph 6(b) shall be made only on the request of the NVE, provided to KABATA and FHWA on or before the 15th day of the third month of the calendar quarter and only at the end each calendar quarter beginning in the first calendar quarter after the calendar quarter in which the initial payment in subparagraph 6(b) above is made.
- (D) Progress payments shall be subject to and payable only upon the review and approval of the progress reports by the KABATA Liaison and such FHWA Division personnel as the latter may direct.



- (E) Separate progress reports shall be provided for the Position on or before the 15th day of the last month of each calendar quarter, beginning in the first full calendar quarter after the effective date of this MOU. Progress reports reviewed and approved by the KABATA Liaison shall be a condition precedent to any payment of funds to the NVE.
- (F) Should this agreement be terminated prior to the completion of the two-year funding period for the Position, all progress payments shall cease except for an amount equal to a percentage of completion prior to termination that has not been previously paid.
- (G) If the KABATA Liaison or the designee of the FHWA determines that insufficient progress has been made or that the work performed is unsatisfactory, the KABATA Liaison in coordination with the designee of FHWA shall advise the NVE of the deficiency and the actions the NVE may take to correct the deficiency to an extent the work may be included in the next progress payment.



SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By: David Miller 6-25-09
David Miller, Division Administrator Date

STATE HISTORIC PRESERVATION OFFICER

By: Judith Bittner 7-1-09
Judith Bittner, Alaska SHPO Date

NATIVE VILLAGE OF EKLUTNA

By: Dorothy Cook 6-25-09
Dorothy Cook, President Date

Appendix 1
Native Village of Eklutna
KABATA Cultural Resource Preservation Project
Budget Table
Two Year Project

PERSONNEL		\$	54,080.00
Tribal Cultural Resources Staff Position	\$54,080		
FRINGE BENEFITS @ 38%		\$	20,550.40
TRAVEL		\$	-
SUPPLIES		\$	4,000.00
General office	\$1,000		
Computer	\$2,500		
Desk and Chair	\$500		
EQUIPMENT		\$	-
OTHER		\$	4,180.00
Telephone / teleconference / Internet	\$480		
Space and meeting room	\$500		
Knik Tribal Members stipends	\$2,500		
Reproduction/Printing/Postage	\$300		
Office Maintenance	\$400		
TOTAL DIRECT CHARGES		\$	82,810.40
TOTAL INDIRECT CHARGES @ 29.98%		\$	24,826.56
TOTAL PROGRAM COST		\$	107,636.96

* not included in indirect charges

Appendix 2

Native Village of Eklutna KABATA Cultural Preservation Project

Budget Narrative Justification

PERSONNEL	\$ 54,080.00
Tribal Cultural Resources Staff Position	
<i>.5 FTE (Half Time for two years) to manage all KABATA funded activities, report activity to management and Council, located at main Tribal office, reporting to the Housing Director.</i>	
20 hrs a week @ \$26 Hr for 104 weeks (2 years) =	
FRINGE BENEFITS @ 38%	\$ 20550.40
<i>A full package of benefits is provided to NVE employees. This includes medical, dental, vision, disability and life insurance; Worker's Compensation insurance and contributions to a portable retirement plan. The present aggregate fringe breakdown is as follows: Soc. sec. + federal med. = 7.65, ESC = 1.65, 401K = 6%, 401K match = 2%, medical = 14.2%, life + other = 3.5%</i>	
TRAVEL	\$ 0.00
SUPPLIES	\$ 4,000.00
General office Consumables	
<i>For project related supplies; paper \$200; ink \$200; pens, pencils, markers, receptacles \$100; folders, binders CDs and CD case \$100; \$400 for spiral binders and other supplies for publishing.</i>	
	\$1,000
Computer	
<i>GIS Computer with special specifications.</i>	
	\$2,500
Desk and Chair	
	\$500
EQUIPMENT	\$ 0
OTHER	\$ 4,180.00
Telephone / teleconference / Internet	
<i>Specific charges based on similar NVE program use.</i>	
<i>Cost estimated @ 20 per month *24 months.</i>	
	\$480

Space and Meeting Room Rental		
Charges will be collected from the program for holding stakeholder meeting.	\$500	
Native Village of Eklutna Membership Stipends/Interview Fees		
Stipends/interview Fees 50 per \$50 Stipends/Interview	\$2,500	
Reproduction/Printing/Postage		
	\$300	
Office Maintenance Electricity/Natural Gas/Building maintenance		
<i>\$ 400 per month for CPPC office space maintenance based on shared cost of other NVE programs.</i>	\$1200	
TOTAL DIRECT CHARGES	\$	82,810.40
TOTAL INDIRECT CHARGES @ 29.98%	\$	24,826.56
GRAND TOTAL	\$	107,636.96

NVE has an Indirect Cost Rate negotiated with the U.S. Department of the Interior. The present rate structure provides for no administrative cost on contractual items and 29.98% for all other cost categories. This charge pays for administrative salaries and benefits, audit services, equipment rental, supplies and other expenses related to the operation of the organization as a whole. A copy of the Indirect Cost Rate Agreement is included in the Appendix.

Knik Arm Crossing Project

**Memorandum of Understanding Implementing a Section 106 Programmatic Agreement for the
Municipality of Anchorage**



KABATA

KNIK ARM CROSSING

DOT&P



Knik Arm Crossing Project
MEMORANDUM OF UNDERSTANDING
Implementing a Section 106 Programmatic Agreement for the
Municipality of Anchorage

WHEREAS, the purpose of this Memorandum of Understanding, (herein MOU), is to implement Stipulations III.G, IV.A.3, and V.A of the Knik Arm Crossing (herein KAC) Project Programmatic Agreement, herein PA, executed December 29, 2008, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470), and its implementing regulations (36 CFR Part 800), herein NHPA, and to establish the respective responsibilities and commitments of the parties for such implementation; and

WHEREAS, this MOU is entered into under the authority of the NHPA, as amended, 16 USC 470 *et. seq* and the National Environmental Policy Act of 1969, as amended, 42 USC 4321 *et. Seq*, herein NEPA; and

WHEREAS, the Federal Highways Administration, herein FHWA, Alaska Division Administrator is the "Agency Official" responsible for compliance with Section 106 of NHPA (16 USC 470) and its implementing regulations (36 CFR 800);

NOW, THEREFORE, the FHWA, the State Historic Preservation Officer for the State of Alaska, (herein SHPO), and the Municipality of Anchorage (herein MOA) hereby promise and agree by and between each other as follows:

1. GENERAL

The parties shall cooperate in development and preparation of: (1) the South Addition Properties Inventory (herein Inventory) within the South Addition Community Council area of the MOA that may be eligible for listing in the National Register of Historic Places (herein NRHP) and/or local register; (2) the Government Hill Neighborhood Plan (herein GHNP); (3) A historic preservation plan (herein Plan) for the Anchorage Historic 4 Neighborhoods, specifically the Downtown, South Addition, Fairview, and Government Hill community council areas of the MOA as they are delineated as of the date hereof and depicted in Attachment A to this MOU; and (4) recording and archiving oral histories from Government Hill's older residents (herein Oral Histories).

- (A) The development of the Inventory, GHNP, and Plan will be guided by the Secretary of Interior's Standards for the Treatment of Historic Properties and Standards for Preservation Planning (36 CFR 68; U.S. Department of the Interior, National Park Service, 1995), and as applicable, follow the guidelines of Anchorage Title 21 and the Anchorage Comprehensive Plan; and



KABATA

KNIK ARM CROSSING

DOT&PF



- (B) The Inventory, GHNP, and Plan shall be used to establish historic preservation planning and management “tools” that will guide area development that promotes the MOA and Alaska heritage and historic district characteristics and values, and for use in the assessment of potential traffic effects of the A-C Couplet, as detailed in Stipulation IX.C., *FEIS Traffic Impacts* of the PA.
- (C) The GHNP and Plan shall address preservation of buildings, structures, districts and landscape features that define the historic character of the neighborhoods.
- (D) The Plan Chapter for Government Hill shall use information in the *Knik Arm Crossing Project Recommendations for Historic Properties Volumes 1 and 2* (Stephen R. Braund & Associates, 2006) and the FEIS, and shall be developed in coordination with the GHNP detailed in the PA, Stipulation III.G, *Government Hill Neighborhood Plan*.
- (E) FHWA shall provide funding to the MOA for its use in recording and archiving oral histories from Government Hill’s older residents.
- (F) All parties shall work together to monitor activities of the GHNP, Inventory, Plan, and Oral Histories and at the finalization of these activities shall evaluate the effectiveness of these activities and submit a report thereof to all parties.

2. SPECIFIC DUTIES AND RESPONSIBILITIES

In addition to all other promises and agreements in this MOU, the specific duties and responsibilities of the parties shall be as follows:

- (A) The FHWA shall:
 - (1) Provide funding in the amount of \$522,000, which includes the MOA’s \$87,000 administrative fee, to the MOA for the Inventory; GHNP, Plan, and Oral Histories;
 - (2) Consult and collaborate with the SHPO and MOA throughout the preparation of the Inventory, GHNP, Plan, and Oral Histories; and
 - (3) Immediately after execution of this MOU, post this MOU on the KAC Project Website for public review to demonstrate how it will be used to develop the Inventory, GHNP, Plan, and Oral Histories related to Phases 1 and 2 of the KAC Project.
- (B) The SHPO shall:
 - (1) Consult and collaborate with the FHWA and MOA throughout the preparation of the Inventory, GHNP, Plan, and Oral Histories; and



KABATA

KNIK ARM CROSSING

DOT&PF



- (2) Endorse the Inventory, GHNP, Plan, and Oral Histories as a means of fostering appreciation of the history of Anchorage, Alaska.
- (C) The MOA shall:
 - (1) Develop and prepare the Inventory in consultation with FHWA and SHPO and submit the final thereof to FHWA within two (2) years of the Record of Decision (ROD);
 - (2) Develop and prepare the Plan in consultation with FHWA and SHPO and submit the final thereof to FHWA within two (2) years of the ROD;
 - (3) Develop the GHNP in consultation with FHWA, SHPO, and the Government Hill Community Council (GHCC) and submit the final thereof to FHWA within two (2) years of the ROD;
 - (4) Develop the Oral Histories in consultation with FHWA, SHPO, and the GHCC and submit the final thereof to FHWA within two (2) years of the ROD;
 - (5) Incorporate the Inventory into the South Addition Historic Preservation Plan;
 - (6) Incorporate the Government Hill Historic Preservation Plan into the GHNP to the extent possible;
 - (7) and Provide day-to-day operational support for the Inventory, GHNP, Plan, and Oral Histories.

3. SCOPES OF WORK

(A) Government Hill Neighborhood Plan (GHNP).

- (1) **Purpose.** The purpose of the GHNP is to promote the orderly growth, improvement, and future development of the neighborhood. Development of the GHNP shall meet the requirements of Anchorage Title 21, Section 21.05.155 and the Anchorage Comprehensive Plan. The GHNP will incorporate Historic Preservation Plan elements specific to the Government Hill neighborhood.
- (2) **Specific Scope of Work**
 - (a) **Scope of Work**
 - MOA to meet with Government Hill Community Council



KABATA

KNIK ARM CROSSING

DOT&PF



- to develop request for proposal (RFP) for services to develop the GHNP.
- MOA to issue RFP and hire consultant.
- MOA to meet with consultant to develop contractual agreement including the scope of work, public participation plan and implementation schedules.
- MOA to monitor consultant and attend regular meetings with consultant to track progress toward benchmarks as identified in the contractual agreement.
- Consultant to present final GHNP to MOA, SHPO, and GHCC.
- Review of GHNP by MOA departments, Assembly, and Mayor's Office.

Requirements that will need to be included in the development of the GHNP:

- The GHNP shall comply with the standards of Anchorage Title 21, Section 21.05.155, Neighborhood or District Plan.
- The GHNP shall state the names of individuals and entities who participated in the development of the plan.
- The GHNP shall enhance or help implement the applicable goals, objectives, policies and/or strategies of the municipal Comprehensive Plan and provide further detail and specificity for the GHNP plan area.
- The GHNP shall address elements related to housing, land use, transportation, community facilities, open space, cultural features, economic vitality and other relevant comprehensive planning elements identified in the plan area, and shall provide geographic recommendations, including a land use plan map.
- The GHNP shall be presented in clear language and coherent form with elements, chapters or sections organized in logical sequence, and goals, objectives, policies, strategies and/or implementation actions expressed clearly and succinctly.
- The GHNP and/or its appendices shall contain inventories and analysis of conditions, problems, needs and issues, and provide recommended goals, strategies and actions to address those conditions.
- The GHNP shall include analysis of its relationship and its



KNIK ARM CROSSING



consistency with other adopted municipal plans, and documented consideration of its relationship to adjoining neighborhoods or areas and major transportation facilities such as the Port of Anchorage and Alaska Railroad.

(b) Deliverables/Reporting

A list of deliverables that will need to be submitted as part of development of the GHNP could include:

- Semi-annual progress report to the KABATA Liaison
- GHNP
- GHP appendices and/or supplementary documentation submitted and available to the public, including background information, data, analyses and a record of the public process and participation by the public and private entities such as public agencies.

(c) Management

Statement(s) regarding management responsibilities of the GHNP could include:

- The MOA shall provide day to day management of the consultant developing the GHNP.
- The MOA is responsible for financial management as outlined in 49 CFR 18.20.
- The MOA is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44.

(d) Administrative Requirements

The MOA shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

MOA will use 20% of the budget to solicit the RFP, manage the consultant, monitor for contract compliance, communicate with the Administration and the Assembly, and facilitate inter-departmental cooperation.

(e) Qualifications

- No qualifications for task leaders for the GHNP is stipulated in the PA, however, the consultant hired to develop the GHNP should demonstrate extensive experience in developing community land use plan maps, goals and strategies; leading public processes to develop



KABATA

KNIK ARM CROSSING

DOT&PF



comprehensive plans; as well as a professional degree in urban planning or related field, membership in the American Planning Association (APA), and/or accreditation by the American Institute of Certified Planners (AICP). If the consultant does not meet these qualifications, then the consultant must identify a qualified subcontractor that meets these qualifications.

(f) Schedule

Statements regarding schedule for tasks to be carried out under this MOU.

- The GHNP shall be completed and implemented within 24 months of issuance of the Record of Decision (ROD) for the Knik Arm Crossing Project.
- The MOA shall develop a task schedule with the consultant hired through the RFP process.

(g) Budget

GHNP project cost will not exceed \$100,000, plus \$20,000 MOA administrative fee. A detailed budget for the project will be submitted by applicants as part of the RFP process.

(B) South Addition Inventory (Inventory)

(1) Purpose

The purpose of this MOU is to develop an inventory of properties within South Addition and apply the NRHP criteria and/or local register criteria. The Inventory shall address documentation of buildings, structures, districts and landscape features that define the historic character of the South Addition Community Council area.

(2) Specific Scope of Work

(a) Scope of Work

- MOA to meet with the SHPO to develop request for proposal for development of the Inventory.
- MOA to issue RFP and hire consultant.
- MOA to meet with consultant to develop contractual agreement including the scope of work, public participation plan and implementation schedules.
- MOA to monitor consultant and attend regular meetings with consultant to track progress toward benchmarks as identified in the contractual agreement.



KABATA

KNIK ARM CROSSING

DOT & PF



- Consultant to present final Inventory to MOA, SHPO, and South Addition Community Council.

(b) Development of the South Addition Inventory

A list of tasks to be carried out as part of development of the Inventory that could include:

- Develop historic context for South Addition.
- Develop survey methodology.
- Inventory buildings and structures within South Addition (photographs, property data, etc.).
- Building survey shall use Alaska Architectural Survey Forms for each building surveyed.
- Alaska Heritage Resource Survey entries will be completed for all surveyed properties.
- Recommendations on eligibility for the National Register of Historic Places and/or local register.

(c) Deliverables/Reporting

A list of deliverables will need to be submitted as part of development of the Inventory

- Semi-annual report to KABATA Liaison
- South Addition Inventory

(d) Management

Statement(s) regarding management responsibilities could include:

- The MOA shall provided day to day management of the consultant developing the Inventory.
- The MOA is responsible for financial management as outlined in 49 CFR 18.20.
- The MOA is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44.

(e) Administrative Requirements

The MOA shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

MOA will use 20% of the budget to solicit the RFP, manage the consultant, monitor for contract compliance, communicate with the Administration and the Assembly, and facilitate inter-departmental cooperation.



KABATA

KNIK ARM CROSSING

DOT 3 PF



(f) Qualifications

Statements regarding qualifications of persons carrying out the tasks under this MOU include:

- No qualifications for Inventory task leaders is stipulated in the PA; however, since the PA is satisfying obligations under Section 106, the consultant hired to develop the Inventory should meet Secretary of Interior Professional Qualifications Standards in Architectural History. Alternatively, the consultant must identify a qualified subcontractor that meets Secretary of Interior Professional Qualifications Standards in Architectural History.

(g) Schedule

Statements regarding schedule for tasks to be carried out under this MOU.

- The PA stipulates that the MOA shall complete the Inventory within two (2) years of the issuance of the ROD.
- The MOA shall develop a task schedule with the consultant hired through the RFP process.

(h) Budget

South Addition Inventory project cost will not exceed \$60,000, plus \$12,000 MOA administrative fee. A detailed budget for the project will be submitted by applicants as part of the RFP process.

(C) Historic Preservation Plan for Downtown, South Addition, Fairview, and Government Hill Community Council Areas

(1) Purpose

The purpose of this MOU is to develop a historic preservation plan for the Downtown, South Addition, Fairview, and Government Hill community council areas. The Plan shall address preservation of buildings, structures, sites, objects, districts and landscapes that define the historic character of the South Addition, Downtown, Fairview and Government Hill neighborhoods, and further develop and enhance the local preservation program affecting these neighborhoods. The Plan will meet the Secretary of Interior's Standards for the Treatment of Historic Properties and Standards for Preservation Planning (36 CFR 68; U.S. Department of the Interior, National Park Service, 1995) and the objectives of Anchorage's local preservation program.



KABATA

KNIK ARM CROSSING

DOT & PF



(2) Specific Scope of Work

(a) Scope of Work

- MOA to meet with the SHPO to develop requests for proposal.
- MOA to issue RFP and hire consultant.
- MOA to meet with consultant to develop contractual agreement including the scope of work, public participation plan and implementation schedules.
- MOA to monitor consultant and attend regular meetings with consultant to track progress toward benchmarks as identified in the contractual agreement.
- Consultant to present final Inventory to MOA, SHPO, and South Addition Community Council.

(b) Deliverables/Reporting

A list of deliverables will need to be submitted as part of development of the Plans could include:

- Semi-annual progress report to the KABATA Liaison
- The Historic Preservation Plan
- Presentation of the Plan to MOA, SHPO and community councils

A list of requirements will need to be included in development of the Plan:

- Plan shall address preservation and management of buildings, structures, sites, objects, districts and landscapes that define the historic character of the neighborhoods.
- Plan shall enhance local historic preservation values and local criteria for historic designation within the Plan study area, further develop the local inventory and register of historic resources with categories of listings, and provide strategic work plan guidance and documented training for maintaining historic properties in response to anticipated development impacts on resources.
- Plan shall address aspects of growth and development in the neighborhoods, and how to identify, manage and provide possible mitigation ideas for future impacts to resources and landscape features.

(c) Management

Statement(s) regarding management responsibilities could include:

- The MOA shall provided day to day management of the



KABATA

KNIK ARM CROSSING

DOT&PF



consultant developing the Plans.

- The MOA is responsible for financial management as outlined in 49 CFR 18.20.
- The MOA is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44.

(d) Administrative Requirements

The MOA shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

MOA will use 20% of the budget to solicit the RFP, manage the consultant, monitor for contract compliance, communicate with the Administration and the Assembly, and facilitate inter-departmental cooperation.

(e) Qualifications

Statements regarding qualifications of persons carrying out the tasks under this MOU include:

- No qualifications for task leaders for the Plans is stipulated in the PA; however, since the PA is satisfying obligations under Section 106, the consultant hired to develop the Inventory, Plans, and Oral Histories should meet Secretary of Interior standards and should demonstrate experience in leading the development and implementation of historic preservation plans and strategies in multiple communities in the U.S. If the consultant does not have experience and is not a qualified Architectural Historian, the consultant must identify a qualified subcontractor that meets Secretary of Interior standards, and is a qualified Architectural Historian.

(f) Schedule

Statements regarding schedule for tasks to be carried out under this MOU.

- The PA stipulates that the MOA shall complete the Plans within two (2) years of the issuance of the ROD.
- The MOA shall develop a task schedule with the consultant hired through the RFP process.



KABATA

KNIK ARM CROSSING

DOT&PF



(g) Budget

Anchorage Historic Preservation Plan project cost will not exceed \$250,000, plus \$50,000 MOA administrative fee. A detailed budget for the project will be submitted by applicants as part of the RFP process.

(D) Recording and Archiving Oral Histories from long-term or older GHCC Area residents

(1) Purpose

The purpose of this MOU is to provide funding to the MOA for its use in recording and archiving oral histories from Government Hill's older residents.

(2) Specific Scope of Work

(a) Scope of Work

- MOA to meet with GHCC and the SHPO to develop request for proposal for Oral Histories.
- MOA to issue RFP and hire consultant.
- MOA to meet with consultant to develop contractual agreement including the scope of work, public participation plan and implementation schedules.
- MOA to monitor consultant and attend regular meetings with consultant to track progress toward benchmarks as identified in the contractual agreement.
- Consultant to present final Inventory to MOA, SHPO, and Government Hill Community Council.
- Consultant to present Oral Histories to MOA, SHPO, and GHCC, and other interested parties.

(b) Recording and Archiving Oral Histories

- Identification of older Government Hill residents, approved by the Government Hill Community Council, who would like to share stories about Government Hill.
- Thirty to sixty GH residents shall be interviewed for the project.
- Interviewing identified residents.
- As part of the project, a minimum of 50 copies of a project booklet shall be produced, with photos and professional layout.
- As part of the project, a PDF of the booklet shall be provided which can be posted on the GH Community Council website and muni.org.



KABATA

KNIK ARM CROSSING

DOT & PF



- As part of the project, downloadable audio files of the interviews will be provided.
- Archiving of interview materials at locations to be determined by the GHCC, MOA and the contractor as part of the project.

(c) Deliverables/Reporting

- Semi-annual progress report to the KABATA Liaison.
- Oral History materials and summary report.

(d) Management

Statement(s) regarding management responsibilities could include:

- The MOA shall provided day to day management of the consultant developing the Oral Histories.
- The MOA is responsible for financial management as outlined in 49 CFR 18.20.
- The MOA is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44.

(e) Administrative Requirements

The MOA shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

MOA will use 20% of the budget to solicit the RFP, manage the consultant, monitor for contract compliance, communicate with the Administration and the Assembly, and facilitate inter-departmental cooperation.

(f) Schedule

Statements regarding schedule for tasks to be carried out under this MOU.

- The PA stipulates that the MOA shall complete the Plans within two (2) years of the issuance of the ROD.
- The MOA shall develop a task schedule with the consultant hired through the RFP process.

(g) Budget

The Government Hill Oral History project cost will not exceed \$25,000, plus \$5,000 MOA administrative fee. A more detailed budget for the project will be submitted by applicants as part of the RFP process.



KABATA

KNIK ARM CROSSING

DOT&PF



4. COOPERATIVE PROCEDURES

- (A) One representative of each party to this MOU will be invited to serve as a participating member of the Inventory and HP Plans Committee, hereinafter Committee.
- (B) Members of the Committee will meet quarterly to review the consultant's work and make comments and recommendations. The MOA shall be responsible for organizing and noticing the meetings.

5. MONITORING, MODIFICATION, CONSISTENCY WITH THE PA, AND TERMINATION.

- (A) Monitoring. The FHWA may monitor any activities carried out pursuant to this agreement. The SHPO will cooperate with the FHWA in carrying out these monitoring and review responsibilities.
- (B) Amendments. Any party to this agreement may request that it be amended.
- (C) Termination. Subject to the payment provisions of the Funding Payment Schedule, any party to this agreement may terminate it by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to the termination to seek agreements on amendments or other actions that would avoid termination.
- (D) Wherever this MOU contradicts or is inconsistent with the PA, the provisions of the PA shall govern exclusively and such contradiction or inconsistency shall have no force or effect.

6. FUNDING PAYMENTS.

The MOA shall receive payments from the funding provided by FHWA as follows:

- (A) MOA administrative fee of \$87,000 will be paid in full to the Municipality upon MOU execution.
- (B) Payments shall be made in quarterly progress payments equal to the amount of work completed and billed by the consultants.
- (C) Notwithstanding subparagraph 6(a) above, the first quarterly payment shall be made within sixty days after execution of this MOU in an amount equal to one-



KABATA

KNIK ARM CROSSING

DOT&PF



eighth of the aggregate total “not to exceed” costs for the Inventory, the GHNP, the Plans, and the Oral Histories, excluding MOA administrative fees, for the purpose of providing start-up funds for commencement of the Inventory, the GHNP, the Plans, and the Oral Histories.

- (D) All payments except the initial payment provided for in subparagraphs 6(A) and 6(C) shall be made only on the request of the MOA provided KABATA and FHWA on or before the 15th day of the third month of the calendar quarter and only at the end each calendar quarter beginning in the first calendar quarter after the calendar quarter in which the initial payment in subparagraphs 6(A) and 6(C) above is made.
- (E) Payments shall be subject to and payable only upon the review and approval of the progress reports by KABATA’s Liaison Officer and such FHWA Division personnel as the latter may direct.
- (F) The MOA shall manage the projects, and one progress report shall be provided for the Inventory, the GHNP, the Plan, and the Oral Histories on or before the 15th day of the last month of each calendar quarter beginning in the first full calendar quarter after the effective date of this MOU. Progress report review and approval by KABATA’s Liaison Officer shall be a condition for payment of funds to the MOA.
- (G) Should this agreement be terminated prior to the completion of any one or more of the Inventory, the GHNP, the Plan, and the Oral Histories, all progress payments shall cease except for an amount equal to any unbilled work that has been completed by the consultants.
- (H) If KABATA’s Liaison Officer or the designee of the FHWA determines that insufficient progress has been made or that the work performed is unsatisfactory, the KABATA Liaison Officer in coordination with the designee of FHWA shall advise the MOA of the deficiency and the actions the MOA may take to correct the deficiency to an extent the work may be included in the next progress payment. Should a dispute arise between the aforementioned parties, the MOA shall have the right to ask the State Historic Preservation Office or the Advisory Council on Historic Preservation to mediate the dispute.



SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By: _____

David Miller, Division Administrator

1/4/10
Date

STATE HISTORIC PRESERVATION OFFICER

By: _____

Judith Bittner, Alaska SHPO

1/13/10
Date

MUNICIPALITY OF ANCHORAGE

By: _____

Dan Sullivan, Mayor

1/14/10
Date

Knik Arm Crossing Project

Memorandum of Understanding Implementing a Section 106 Programmatic Agreement for the

Matanuska-Susitna Borough



Knik Arm Crossing Project
MEMORANDUM OF UNDERSTANDING
Implementing the Knik Arm Crossing Section 106 Programmatic
Agreement for the
Matanuska-Susitna Borough

WHEREAS, the purpose of this Memorandum of Understanding, (herein MOU), is to implement Stipulations IV.A.1 and V.A of the Knik Arm Crossing (herein KAC) Project Programmatic Agreement, (herein PA), executed December 29, 2008, pursuant to Section 106 of the National Historic Preservation Act of 1966 as amended (16 USC 470), herein NHPA, and its implementing regulations (36 CFR Part 800), and to establish the respective responsibilities and commitments of the parties for such implementation; and

WHEREAS, this MOU is entered into under the authority of the NHPA, as amended, 16 USC 470 *et. seq* and the National Environmental Policy Act of 1969, as amended, 42 USC 4321 *et. Seq*, herein NEPA; and

WHEREAS, the Federal Highways Administration, herein FHWA, Alaska Division Administrator is the “Agency Official” responsible for compliance with Section 106 of NHPA (16 USC 470) and its implementing regulations (36 CFR 800);

NOW, THEREFORE, the FHWA, the State Historic Preservation Officer for the State of Alaska, (herein SHPO), and the Matanuska-Susitna Borough (herein MSB) hereby promise and agree by and between each other as follows:

I. GENERAL

The parties shall cooperate in implementation of surveys and evaluation of areas sensitive to historical and archaeological sites within the Matanuska-Susitna Borough as identified in the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough (January 31, 2008)*, data gathered during the surveys herein after referred to as Field Verification Project shall be incorporated into the Alaska Heritage Resources Survey data, hereinafter AHRS, and into the Matanuska-Susitna Borough’s Geographic Information System, hereinafter GIS.

- (A) Development of the Field Verification project shall be guided by the Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44718) for identification and testing procedures as presented in *Guidelines for Evaluating and Registering Archaeological Properties* (National Register Bulletin 2000); and



- (B) The undertaking will enable MSB to create site sensitive models for similar areas that will not be covered by field investigations. Field investigations will also assist MSB staff in their effort to establish historic preservation planning and management “tools” that will guide future land use, historic preservation, and development in areas under their jurisdiction.
- (C) Field data gathered will be incorporated into the AHRS files and into the MSB GIS system. The AHRS inventory database shall be restricted from the general public by the Archaeological Resources Protection Act of 1979 Public Law 96-95, *Archaeological Resources Protection Act of 1979, Sections 9a-b*, and Alaska Statute 40.25.120 (a)(4) (Public Record Disclosures), and Policy and Procedure No. 50200 which states that access to historic, prehistoric, and paleontological site location information contained in the AHRS is closed to the general public.
- (D) All parties shall work together to ensure field activities and office research meet the goals as set in the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough (January 31, 2008)*. All field and research activities shall be detailed in semi-annual reports to the FHWA. At the end of each field season site data will be filed and listed in the AHRS files and MSB GIS site maps and inventory.

II. SPECIFIC DUTIES AND RESPONSIBILITIES

In addition to all other promises and agreements in this MOU, the specific duties and responsibilities of the parties shall be as follows:

- (A) The FHWA shall:
 - (1) Provide funding in the amount of \$ **310,910.00** to MSB for the field survey evaluation and inventory, determination of eligibility of historic sites through both on-the-ground reconnaissance surveys and archival research in addition to transference of the AHRS data to MSB GIS site maps and inventory. This funding will be used by MSB in accordance with the budget in Section 3 of this MOU.
 - (2) Consult and collaborate with the SHPO and MSB throughout the preparation of field data and reports;
 - (3) Immediately after execution of this MOU, it shall be posted on the KAC Project Website for public review. The MOU will demonstrate how federal funding will be used to protect and inventory sites important to MSB and Alaska. Funding for the survey evaluation and inventory will also be used to develop site sensitive models for future work in similar terrain. Site data will be listed in the AHRS files and the MSB GIS data



inventory. All data will be incorporated into reports relating to Phases I and II of the KAC Project.

(B) The SHPO shall:

- (1) Consult and collaborate with the FHWA and MSB throughout the preparation of the field data, listing new sites into the AHRS files and giving MSB the data for their GIS site maps and inventory
- (2) Provide updated AHRS information in GIS shapefile format to MSB one year after the signing of a Reimbursable Service Agreement
- (3) Enter new site information and complete AHRS data entry within one year of receipt of updated site information from MSB field work and research data in addition to providing updated information to MSB for their GIS site maps and inventory.

(C) The MSB shall:

- (1) Implement the scope of work that has been developed in consultation with FHWA and SHPO as identified in Section 3. (3) of this document
- (2) Coordinate MSB field work with the Tribes as per the PA (Stipulation IV.A.2)
- (3) Provide day-to-day operational support for the field surveys that include but is not limited to archival research in addition to incorporating AHRS data into the MSB GIS site maps and inventory.
- (4) Provide semiannual reports regarding field work and research data to the Knik Arm Bridge and Toll Authority (KABATA) Liaison
- (5) Comply with FHWA administrative requirements as included in 49 CFR 18
- (6) Submit field work and research results in a report to be submitted to FHWA within four (4) years of the signing of this MOU

III SCOPES OF WORK

(A) **Field Survey evaluation and Inventory**

- (1) **Purpose.** The purpose of this section of the MOU is to implement field investigations in areas sensitive to both historic and prehistoric sites



identified in the *Knik Arm Bridge and Toll Authority Historic Preservation Plan for Portions of the Matanuska-Susitna Borough (January 31, 2008)*. The field investigations will assist MSB in efforts to establish historic preservation planning and management “tools” such as site sensitive models that will guide future land uses and historic preservation. Information and understanding gained from the field work and ensuing research may be incorporated into the MSB Over-All Comprehensive Plans. GPS readings taken from known AHRS listed sites and sites recovered by surveys will assist in identifying exact locations of all sites in the project area listed in the State AHRS files.

(2) **Guiding Principle.** Through consultation with all parties the Field Verification project shall be executed within the allotted timeframes.

(3) **Specific Scope of Work**

(a) **Meetings**

Meetings to occur under this task shall include:

1. MSB shall meet with SHPO consult with the AHRS for existing sites (listed since the KABATA Preservation Plan was written) in regions slated to be surveyed. MSB shall submit to SHPO maps of areas to be surveyed and inventoried. Most areas will be covered by on-the-ground walk over reconnaissance surveys.
2. MSB shall meet with Tribes to review scope of work; coordinate field work with Eklutna and Knik Village Tribal Council; and schedule joint surveys.
3. Community meetings will take place for consultation in or adjacent to areas proposed for surveys.
4. At the end of each year MSB shall present results of research and field work to SHPO, Tribes, and other interested consulting parties

(b) **Project Deliverables**

1. The document shall include recommendations for the preservation and management of archaeological sites, and landscape features that define the historic character and culture of MSB
2. The document shall address aspects of growth and development in the MSB
3. The project will provide a GIS mapping system and inventory of sites with accurate GPS locations.



(c) Deliverables/Reporting

The following will include:

1. Semi-annual progress report to FHWA, SHPO and the KABATA Liaison (three months following the field season a summary of the field season will be submitted).
2. Project results/presentation for public dissemination

(d) Management

1. MSB shall provide day to day management of field work and research activities
2. MSB is responsible for financial management as outlined in 49 CFR 18.20
3. MSB is responsible for the work carried out under this MOU as outlined in (g) of this section.
4. MSB is responsible for submitting semi-annual progress/performance reports as outlined in 49 CFR 18.40 through 18.44

(e) Administrative Requirements

The MSB shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

(f) Qualifications

1. The Principal Investigator must meet the Secretary of Interior standards to oversee and carry out the project.
2. The Field crew-chief must have extensive supervisory field experience in Alaska that should include both archaeological excavations and field survey experience.
3. All financial reports shall be submitted by MSB financial accounting offices.
4. The MSB GIS manager shall supervise all transfers of data from the AHRs files to the GIS mapping system and inventory.

(g) Schedule

The MSB Historic Preservation Commission (HPC) and the State Historic Preservation Officer (SHPO) shall be apprised of all activities undertaken and shall review all reports generated by both the field activities and research conducted. See Appendix A for proposed schedule.

(B) GIS Data Incorporation.

- (1) Purpose.** The purpose of this MOU is to implement incorporation of AHRs data into the MSB GIS system.



- (2) **Guiding Principle.** The GIS data incorporation shall facilitate preservation of archaeological sites, buildings and landscape features that define the history and culture of the MSB and provide a guide for its growth and development.

(3) **Specific Scope of Work**

(a) **Meetings**

A list of meetings to occur under this task that could include:

1. MSB and SHPO meet to develop a scope of work and schedule for GIS data incorporation
2. Data incorporation from the AHRS to MSB GIS mapping system and inventory shall occur following each field season
3. MSB to present final results of GIS data incorporation to SHPO and other interested consulting parties.

(b) **Conducting GIS Data Incorporation**

A list of tasks that will need to be carried out as part of GIS data incorporation that could include:

1. SHPO will provide updated GIS and AHRS information to MSB
2. MSB to incorporate AHRS data into MSB's GIS mapping system and inventory
3. Following completion of the last field season and the final report SHPO will ensure that MSB has all the pertinent GIS data from their AHRS files.

(c) **Deliverables/Reporting**

A list of deliverables that will need to be submitted as part of GIS data incorporation that could include:

1. Semi-annual progress report to the KABATA Liaison
2. SHPO will provide updated AHRS information in GIS shapefile format to MSB for their GIS mapping system and inventory
3. MSB to supply AHRS data from the Field Verification Project to SHPO
4. Following completion of the Field Verification Project SHPO will provide updated AHRS information in GIS shapefile format to MSB for their GIS mapping system and inventory
5. Present MSB GIS mapping system and inventory incorporating the State AHRS information to SHPO and other interested consulting parties.

(d) **Management**

1. The MSB shall provide day to day management of the GIS data



incorporation

2. The MSB is responsible for financial management as outlined in 49 CFR 18.20
3. The MSB is responsible for submitting progress/performance reports as outlined in 49 CFR 18.40 through 18.44
4. The MSB GIS shall sign an agreement with SHPO that states “access to historic, prehistoric, and paleontological site location information contained in the AHRS and MSB GIS mapping system and inventory is confidential information and must remain closed to the general public.”

(e) Administrative Requirements

The MSB shall adhere to administrative requirements outlined in *Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments* (49 CFR 18).

(f) Qualifications

1. The GIS manager will oversee all activities relating to the transference of data from the state AHRS files to the MSB GIS mapping system and inventory
2. The GIS manager will ensure that the data is appropriately handled and remains confidential.

(g) Schedule.

1. SHPO will provide updated AHRS GIS information to MSB GIS in a shapefile format one year after signing the Reimbursable Service Agreement
2. One year following completion and receipt of the Field Verification Project final report, SHPO will enter updated and new site information and complete GIS data entry and provide the updated information to the MSB in a shapefile format.



IV. MONITORING, MODIFICATION, CONSISTENCY WITH THE PA, AND TERMINATION.

- (A) Monitoring. The FHWA and SHPO may monitor any activities carried out pursuant to this agreement.
- (B) Amendments. Any party to this agreement may request that it be amended.
- (C) Termination. Subject to the payment provisions of the Funding Payment Schedule, any party to this agreement may terminate it by providing 30 days written notice to the other parties, provided that the parties will consult during the period prior to the termination to seek agreements on amendments or other actions that would avoid termination.
- (D) Wherever this MOU contradicts or is inconsistent with the PA, the provisions of the PA shall govern exclusively and such contradiction or inconsistency shall have no force or effect.

V. FUNDING PAYMENTS.

The MSB shall receive payments from funding provided by FHWA as follows:

- (A) Payments shall be made in semi-annual progress payments ~~equal to~~, calculated by utilizing the aggregate percentage of completion of the Field Verification Project and GIS data incorporation.
- (B) Notwithstanding subparagraph V(A) above, the first semi-annual payment shall be made as soon as possible after the effective date of this MOU in an amount equal to one-sixth of the aggregate total provided for the Field Verification Project and GIS data incorporation, for the purpose of providing start-up funds for commencement of the Field Verification Project and GIS data incorporation.
- (C) All payments, except the initial payment provided for in subparagraph V(B), shall be made on or before the 15th day of the sixth month following the first payment. ~~of the calendar and only at the end of each half calendar year, beginning with the first twelve months after the initial payment is made as written above in subparagraph V(B).~~
- (D) Progress payments shall be subject to and payable only upon the review and approval of the progress reports by KABATA's Liaison Officer and such FHWA Division personnel as the latter may direct.



- (E) Separate progress reports shall be provided for the Field Verification Project and GIS data incorporation on or before the 15th day of the last month of each half calendar year beginning in the first full half year after the effective date of this MOU. Progress reports reviewed and approved by KABATA's Liaison Officer shall be a condition precedent to any payment of funds to the MSB.
- (F) Should this agreement be terminated prior to the completion of the Field Verification Project and GIS data incorporation, all progress payments shall cease except for an amount equal to a percentage of completion prior to termination that has not been previously paid.
- (G) If KABATA's Liaison Officer or the designee of the FHWA determines that insufficient progress has been made or that the work performed is unsatisfactory, the KABATA Liaison Officer in coordination with the designee of FHWA shall advise the MSB of the deficiency and the actions the MSB may take to correct the deficiency to an extent the work may be included in the next progress payment.



SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By: David Miller 6-25-09
David Miller, Division Administrator Date

STATE HISTORIC PRESERVATION OFFICER

By: Judith Bittner 7-1-09
Judith Bittner, Alaska SHPO Date

MATANUSKA-SUSITNA BOROUGH

By: John Duffy 6-23-09
John Duffy, Borough Manager Date



APPENDIX - A

First Winter- Early Spring

- A qualified archaeologist will conduct research in libraries, museums and in state, federal and MSB land records
- Consult AHRS records for existing sites to be verified in the field with a GPS reading
- Review development projects slated for locations within and surrounding the Area of Potential Effect as identified in the 2007 *Knik Arm Bridge and Toll Authority Historic Preservation Plan*.
- Meet with Eklutna and Knik Village Tribal Councils to discuss findings and coordinate proposed field surveys; such as areas and percentages to be covered.
- Meet with local communities for their input
- Collection of oral narratives from both the Native and Euro-American community may be necessary to understand land uses.
- Send out letters of request for permission to enter private property at a convenient time for the owner
- Identify locations to be surveyed based on research and reviews of development projects
- Meet with MSB Historic Preservation Commission hereon referred to as HPC and with SHPO regarding proposed field work areas
- Send FHWA and KABATA Liaison semi-annual report on winter research and proposed field activities with financial report

Late Spring- Summer

- Carry out field surveys in identified areas. A crew of three shall carrying out on the ground walk-over reconnaissance surveys with shovel testing in addition to conducting surveys of the built environment.
- Data shall be collected according to standard archaeological methods
- Existing and new sites shall be verified by GPS readings

First Fall

- Continue field work as long as possible.
- At the end of the season, report to SHPO and inventory new sites for the State AHRS files.
- New site information shall be incorporated into MSB GIS site maps and inventory.
- Start writing Phase I of the report to include evaluation and inventory of sites located during the field season in addition to complications that might have arisen.
- Submit report on research and recovered field data to MSB HPC and SHPO for comments and feedback



- Send FHWA and KABATA Liaison semi-annual Phase I report with financial report

Second Winter – Early Spring

- Meet with Eklutna and Knik Tribal Village Council to share information recovered during the field season
- Meet with SHPO, Eklutna and Knik Tribal Village Councils in a joint session to discuss field data
- Meet with community members and give a presentation on information gleaned over the field season
- Incorporate comments received from MSB HPC and SHPO
- Continue Phase I report; evaluate and report on sites recovered during the field season, addressing the Historic Landscape
- Review development projects within Community Councils as identified in the 2007 *Knik Arm Bridge and Toll Authority Historic Preservation Plan*
- Continue with research for the following field season.
- Meet with Eklutna and Knik Tribal Village Council to identify and coordinate areas to be surveyed during the upcoming field season; make necessary changes if needed from results of the previous season
- Send out letters of request for permission to enter private property at a convenient time for the owner
- Keep MSB HPC apprised of all activities
- Send FHWA and KABATA Liaison semi-annual report on research and proposed field data with financial report

Second Late Spring - Summer

- Carry out field work identified over the winter and early spring
- Coordinate field work with Eklutna and Knik Village Tribal Councils
- A crew of three shall examine areas by carrying out on the ground walk over reconnaissance surveys with shovel testing; in addition to conducting surveys of the built environment
- Data shall be collected according to standard archaeological methods
- Existing and new sites shall be verified by GPS readings

Second Fall

- Continue field work as long as possible.
- At the end of the season, report to SHPO and inventory new sites for the State AHRS files.
- New site information shall be incorporated into MSB GIS site maps and inventory.
- Start writing Final report incorporating information from Phase I of the report, addressing all aspects of the field and archive research.
- Send FHWA and KABATA Liaison semi-annual report on research and recovered field data with financial report



Third Winter – Early Spring

- Meet several times with Eklutna and Knik Tribal Village Council to share information recovered during the field season. Discuss the particulars to be included in the report and coordinate the information
- Continue archival research and evaluation on buildings, structures and landscapes identified during the field seasons
- Continue reviewing development projects to be surveyed in the following summer
- Based on work accomplished over two field seasons assist in developing a site sensitive models for future archaeological work to be conducted in the same and similar regions
- Incorporate GIS information into the final document

Send FHWA, SHPO and KABATA Liaison semi-annual report on accumulated research, AHRs transfers to MSB GIS mapping systems and inventory with financial report.

Late Spring –Summer

- Collect all the data and incorporate them into the report.
- Work with the graphics designer for detailed illustrations
- Assemble photographs and maps needed for the final document
- Ensure that all AHRs files pertinent to the research area are incorporated into the MSB GIS map system and inventory
- Complete draft of project report and submit to MSB HPC and SHPO for comments
- Ensure that existing and new sites are verified by GPS readings

Third Fall

- Incorporate comments into final document and submit to FHWA, SHPO, MSB HPC, and KABATA Liaison
- Send FHWA the sign-off document regarding transference of AHRs information to MSB GIS mapping system and inventory with final financial report



BUDGET: Break down of cost

<u>Personal Services</u>	<u>Total</u>
GIS Manager Meetings, reports, project oversight 40 hours @ \$50 per hour	\$ 2,000.00
GIS Technician AHRS MSB GIS conversion/integration Updating- 220 hours @ \$35 per hour	\$ 7,700.00
<u>Supplies</u> Map production for meetings: estimate	<u>300.00</u>
Subtotal	\$ 10,000.00
<u>Personal Services</u>	<u>Total</u>
Cultural Resources Archaeologist to conduct research, Review KABATA generated land activities, write reports, document and evaluate sites. 3 years @ \$34 per hour	\$212,160.00
2 additional archaeologists to conduct field surveys as outlined in the "scope of work." 16 wks per year. 2 yrs. @ \$34 per hour	\$ 87,040.00
Graphics personnel Illustrations-maps 38 hours @ \$45 per hour	\$ <u>1,710.00</u>
Subtotal	\$300,910.00
TOTAL	\$310,910.00

APPENDIX C

FORMAL SECTION 7 CONSULTATION AND CONFERENCE INFORMATION

NATIONAL MARINE FISHERIES SERVICE BIOLOGICAL OPINION FOR THE COOK INLET BELUGA WHALE

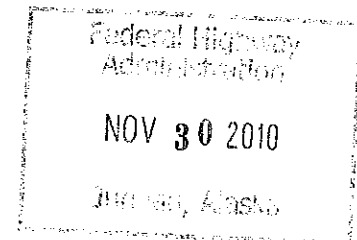


**UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration**

*National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668*

November 30, 2010

David C. Miller
Administrator, Federal Highway Administration
Alaska Division
709 West 9th Street, Room 851
P.O. Box 21648
Juneau, Alaska 99802



Dear Mr. Miller:

This transmits National Marine Fisheries Service's (NMFS) Biological and Conference Opinion for the Knik Arm Crossing, in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). This Opinion is based on information provided by the Federal Highway Administration (FHA); Knik Arm Bridge and Toll Authority (KABATA); and other sources of information. A complete administrative record of this consultation is on file at the NMFS offices in Anchorage.

NMFS concludes the described action is not likely to jeopardize the continued existence of the Cook Inlet beluga whale, nor to destroy or adversely modify its proposed critical habitat. In formulating this opinion, NMFS used the best available information, including information provided by NMFS, FHA, KABATA, various research on the Cook Inlet beluga whale, and the traditional knowledge of Alaska Natives. Although we conclude the project is not likely to jeopardize the continued existence of this species, we remain concerned about the potential additive effects of development projects within the habitat of these endangered whales. Conservation recommendations are provided with the opinion which are intended to mitigate potential adverse effects, and we continue to encourage FHA to fully consider and exercise its responsibilities under section 7(a)(1) of the Act.

Because critical habitat has not been designated for the Cook Inlet beluga whale, this document will be a conference opinion on the Knik Arm Crossing as it concerns proposed critical habitat. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales, NMFS will issue a letter confirming this conference opinion to be the biological opinion for this critical habitat.

Sincerely,

Robert D. Macum (Acting RA)

for

James W. Balsiger, Ph.D.
Administrator, Alaska Region



**ENDANGERED SPECIES ACT: SECTION 7 CONSULTATION
BIOLOGICAL OPINION**

Action Agency: U.S. Department of Transportation, Federal Highways Administration

Activity: Knik Arm Crossing, Anchorage, Alaska

Consulting Agency: National Marine Fisheries Service, Alaska Region

Date Issued: November 30, 2010

Approved By: Robert D. Mecum Acting RA

The U.S. Department of Transportation, Federal Highways Administration (FHA), has requested formal consultation on the Knik Arm Crossing (KAC) Project at Anchorage, Alaska by letter dated July 1, 2010. This document constitutes NMFS' opinion on the effects of that action on the endangered species in accordance with section 7 of the ESA. Specifically, this opinion analyzes the effects of the Knik Arm Crossing on the endangered Cook Inlet beluga whale (*Delphinapterus leucas*) (73 FR 62919, October 22, 2008). In formulating this Biological Opinion, NOAA Fisheries used information presented in the FHA's June 2010 Biological Assessment of the Knik Arm Crossing, the October 2008 Conservation Plan for the Cook Inlet Beluga Whale, the 2008 Status Review and Extinction Risk Assessment of Cook Inlet Belugas (*Delphinapterus leucas*), and the 2008 Final Supplemental Environmental Impact Statements for the Cook Inlet Beluga Whale Subsistence Harvest, A Review of Beluga Whale Behavior and Response to In-Water Structures prepared for the Knik Arm Bridge and Toll Authority, along with other research relating to beluga whales and information provided by NOAA's National Marine Mammal Laboratory, the State of Alaska, and the traditional knowledge of the Alaska Native community.

Section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 *et. seq.*) requires that each federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of any critical habitat of such species. When the action by a federal agency may affect a protected species, that agency is required to consult with either the National Marine Fisheries Service (NMFS) or the US Fish and Wildlife Service (USFWS), depending upon the protected species that may be affected. Formal consultations on most listed marine species are conducted between the action agency and NMFS. Consultations are concluded after NMFS' issuance of a biological opinion (opinion) that identifies whether a proposed action is likely to jeopardize the continued existence of a listed species, or destroy or adversely modify its critical habitat. If jeopardy or destruction or adverse

modification is found to be likely, the opinion must identify the reasonable and prudent alternatives to the action, if any, that would avoid jeopardizing any listed species and avoid destruction or adverse modification of designated critical habitat. If jeopardy is not likely, the opinion may also include an incidental take statement (ITS), which specifies the amount or extent of incidental take that is anticipated from the proposed action. Non-discretionary reasonable and prudent measures to minimize the impact of the incidental take are included along with the implementing terms and conditions, and conservation recommendations are made.

TABLE OF CONTENTS

I. Description of the Proposed Action	1
II. Status of the Species	6
III. Environmental Baseline.....	17
IV. Effects of the Action	32
V. Cumulative Effects.....	54
VI. Synthesis and Integration	56
VII. Conclusions.....	71
VIII. Conservation Recommendations	71
IX. Reinitiation of Consultation	72
X. Incidental Take Statement	72
XI. Literature Cited	72

Presentation of the Analysis in this Opinion

Biological opinions are constructed around several basic sections that represent specific requirements placed on the analysis by the ESA and implementing regulations. These sections contain different portions of the overall analytical approach described here. This section is intended as a basic guide to the reader of the other sections of this opinion and the analyses that can be found in each section. Every step of the analytical approach described above will be presented in this opinion in either detail or summary form.

Description of the Proposed Action – This section contains a basic summary of the proposed Federal action and any interrelated and interdependent actions. This description forms the basis of the first step in the analysis where we consider the various elements of the action and determine the stressors expected to result from those elements. The nature, timing, duration, and location of those stressors define the action area and provide the basis for our exposure analyses.

Status of the Species – This section provides the reference condition for the species and critical habitat at the listing and designation scale. These reference conditions form the basis for the determinations of whether the proposed action is not likely to jeopardize the species or result in the destruction or adverse modification of critical habitat. Other key analyses presented in this section include critical information on the biological and ecological requirements of the species and critical habitat and the impacts to species and critical habitat from existing stressors.

Environmental Baseline – This section provides the reference condition for the species and critical habitat within the action area. By regulation, the baseline includes the impacts of past, present, and future actions (except the effects of the proposed action) on the species and critical habitat. This section also contains summaries of the impacts from stressors that will be ongoing in the same areas and times as the effects of the proposed action (future baseline). This information forms part of the foundation of our exposure, response, and risk analyses.

Effects of the Proposed Action – This section details the results of the exposure, response, and risk analyses NMFS conducted for listed species and elements, functions, and areas of critical habitat.

Cumulative Effects – This section summarizes the impacts of future non-Federal actions reasonably certain to occur within the action area, as required by regulation. Similar to the rest of the analysis, if cumulative effects are expected, NMFS determines the exposure, response, and risk posed to individuals of the species and features of critical habitat.

Synthesis and Integration – In this section of the opinion, NMFS presents the summary of the effects identified in the preceding sections and then details the consequences of the risks posed to individuals and features of critical habitat to the species or Distinct Population Segment at issue. Finally, this section concludes whether the proposed action may result in jeopardy to the continued existence of a species or the destruction or

adverse modification of designated critical habitat.

Legal and Policy Framework

The purposes of the ESA, “...are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section.” To help achieve these purposes, the ESA requires that, “Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat...”

Jeopardy Standard

The “jeopardy” standard has been further interpreted in regulation (50 CFR 402.02) as a requirement that Federal agencies insure that their actions are not likely to result in *appreciable reductions in the likelihood of both the survival and recovery of the species in the wild by reducing its numbers, reproduction, or distribution*. It is important to note that the purpose of the analysis is to determine whether or not appreciable reductions are reasonably expected, but not to precisely quantify the amount of those reductions. As a result, our assessment often focuses on whether a reduction is expected or not, but not on detailed analyses designed to quantify the absolute amount of reduction or the resulting population characteristics (abundance, for example) that could occur as a result of proposed action implementation.

For the purposes of this analysis, NMFS equates a listed species’ probability or risk of extinction with the likelihood of both the survival and recovery of the species in the wild for purposes of conducting jeopardy analyses under section 7(a)(2) of the ESA. A designation of a high risk of extinction indicates that the species faces significant risks from internal and external processes that can drive a species to extinction. The status assessment considers and diagnoses both the internal and external processes affecting a species’ extinction risk.

The parameters of productivity, abundance, and population spatial structure are important to consider because they are predictors of extinction risk, the parameters reflect general biological and ecological processes that are critical to the survival and recovery of the listed species, and these parameters are consistent with the “reproduction, numbers, or distribution” criteria found within the regulatory definition of jeopardy (50 CFR 402.02).

Destruction or Adverse Modification Standard

For critical habitat, NMFS does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the analysis with respect to critical habitat. NMFS will evaluate “destruction or adverse modification” of critical habitat by determining if the action reduces the value of critical habitat for the conservation of the species.

Additional requirements on the analysis of the effects of an action are described in regulation (50 CFR 402) and our conclusions related to “jeopardy” and “destruction or adverse modification” generally require an expansive evaluation of the direct and indirect consequences of the proposed action, related actions, and the overall context of the impacts to the species and habitat from past, present, and future actions as well as the condition of the affected species and critical habitat [for example, see the definitions of “cumulative effects,” “effects of the action,” and the requirements of 50 CFR 402.14(g)]. Recent court cases have reinforced the requirements provided in section 7 regulations that NMFS must evaluate the effects of a proposed action within the context of the current condition of the species and critical habitat, including other factors affecting the survival and recovery of the species and the functions and value of critical habitat.

Consultations designed to allow Federal agencies to fulfill these purposes and requirements are concluded with the issuance of a biological opinion or a concurrence letter. Section 7 of the ESA and the implementing regulations (50 CFR 402), and associated guidance documents (*e.g.*, USFWS and NMFS 1998) require biological opinions to present: (1) a description of the proposed Federal action; (2) a summary of the status of the affected species and its critical habitat; (3) a summary of the environmental baseline within the action area; (4) a detailed analysis of the effects of the proposed action on the affected species and critical habitat; (5) a description of cumulative effects; and (6) a conclusion as to whether it is reasonable to expect the proposed action is not likely to appreciably reduce the species’ likelihood of both surviving and recovering in the wild by reducing its numbers, reproduction, or distribution or result in the destruction or adverse modification of the species’ designated critical habitat.

Consultation History

Communication between FHA/KABATA and NMFS regarding the KAC project has been ongoing since 2004. NMFS served as a Cooperating Agency for the FHA’s 2007 EIS written for this project. In association with project scoping and preparation of the Draft EIS, six Interdisciplinary Team meetings were held between January and September 2005. NMFS participated in all six meetings. This team was established to provide study information and receive input on issues to be addressed in the EIS. Representatives from both the cooperating and participating agencies took part and provided key input, such as preliminary corridor concepts, ongoing project studies, cumulative effects methodology, natural environment resource components, crossing concepts, screening criteria, and potential impacts related to the KAC project. Additionally, many topic meetings focusing on areas of special interest or jurisdiction of specific agencies also took place with small groups of team members.

The FHA requested initiation of formal consultation for the KAC project by letter dated July 1, 2010. NMFS agreed to initiate consultation by letter dated August 5, 2010. FHA has requested that this consultation be expedited to meet their December 20, 2010 internal deadline for a Record of Decision under NEPA.

Term of this Opinion

This opinion will be valid upon issuance and remain in force until re-initiation may

become necessary. Consultation will be re-initiated if there are 1) significant changes in the type of activities, 2) new information indicates these actions are impacting the Cook Inlet beluga whale and its critical habitat to a degree or in a manner not previously considered, or 3) new species or critical habitats become listed under the ESA.

Because critical habitat has not been designated for the Cook Inlet beluga, this document will be a conference opinion on the proposed project. Upon issuance of a final rule designating critical habitat for Cook Inlet beluga whales and if appropriate, NMFS will issue a letter confirming this conference opinion to be the biological opinion for this critical habitat.

Action Area

The action area is defined as all areas to be affected directly or indirectly by the federal action (50 CFR §402.02). The action area is typically larger than the project area and extends out to a point where no measurable effects from the project occur. The action area for the KAC project is defined based on the project footprint and the limits of the project's effects on the environment. The action area includes those areas potentially exposed to the effects of project construction, such as underwater noise and sediment suspension, and areas exposed to the effects of project operation, including underwater noise resulting from bridge traffic, sediment deposition in Knik Arm, and indirect effects caused by land development resulting from the project.

While other aspects of construction (e.g., turbidity) and operation (e.g., underwater noise, stormwater, sediment deposition) will cause impacts to the environment, FHA and KABATA determined the periphery of the action area within Knik Arm by considering the activity(ies) whose impacts will extend farthest from the project: those caused by temporary pile-driving noise. FHA and KABATA anticipate impact pile driving will create the highest noise levels of all construction activities. Noise associated with impact driving of temporary piles during construction could extend 23 miles before attenuating to ambient levels, based on estimated transmission-loss calculations. This estimated distance of KAC construction noise attenuation to ambient levels (125 dB re 1 μ Pa) assumes a constant attenuation value; in reality, attenuation will be variable because of changes in environmental conditions along this sound path (e.g. changes in bathymetry, salinity, substrate type). The action area thus encompasses all areas that may be affected by underwater sounds equal to or greater than 125 dB re 1 μ Pa as a result of the proposed action. This area includes all of Knik Arm and portions of upper Cook Inlet within this soundfield. The direct and indirect effects of this action on the endangered Cook Inlet beluga whale are expected to be confined to the action area.

I. DESCRIPTION of the PROPOSED ACTION

The Alaska Division of the Federal Highway Administration and Knik Arm Bridge and Toll Authority plan to construct the Knik Arm Crossing project, which consists of a new bridge and approaches connecting the KAC to existing transportation infrastructure (Figure 1).



Figure 1. Rendering of the proposed Knik Arm Crossing. This is of an earlier design, and does not depict the increased inter-pier distance of 275 feet. The existing Port MacKenzie is in the foreground.

The KAC design will employ an 8,200-foot-long, pier-supported bridge with armored gravel fill approaches that extend seaward from the eastern and western sides of Knik Arm. The bridge will be supported on piers with 275-foot spans. A navigable opening will be provided that meets dimensions required by the USCG (estimated at 250 feet wide by 50 feet above mean higher high water [MHHW]). Bridge height will be approximately 80 feet above mean lower low water (MLLW) at the navigable opening.

The armored-fill bridge approaches will be approximately 300 to 500 feet wide at seabed, 2,000 feet long on the western shore, and 3,300 feet long on the eastern shore. An 80-foot-wide paved road will be constructed on the approaches. The approach from the western bluff will be approximately 70 feet high and extend from the bluff to connect to the western side of the pier-supported bridge. On the Anchorage side, the fill approach will curve and run southward along the shoreline around Cairn Point to the northern edge of the future Port of Anchorage (POA) expansion.

The KAC will accommodate four lanes of traffic and a multiuse pathway. The functional classification of the Crossing will be a rural principal arterial highway, with a design speed of 70 mph. Project construction is planned to occur in two phases. Phase 1 is anticipated to begin in 2012 and to last 5 years (with a sixth year possible because of construction delays associated with weather conditions, construction logistics, beluga shut-down periods, etc.). Phase 2 will be constructed when increased traffic volumes warrant the additional capacity. All in-water construction work in Knik Arm will occur during Phase 1.

Drilled-shaft technology for the large-diameter, permanent bridge piers will be used as opposed to driven piles, significantly reducing in-water noise exposure. Drilled shafts will be constructed using oscillators to place 116 shafts comprising 29 piers (4 shafts per bridge pier). A detailed description of the proposed plan may be found in the Biological Assessment (BA) for this consultation (HDR 2010).

II. STATUS OF THE SPECIES (RANGEWIDE)

NMFS has determined the Cook Inlet beluga whale to be the only threatened or endangered species likely to occur in the action area. The Cook Inlet Distinct Population Segment (DPS) of beluga whale was listed as endangered under the ESA in 2008. This opinion will consider the potential effects of the above described actions on this species. Cook Inlet beluga whales are also designated as depleted and strategic under the Marine Mammal Protection Act (MMPA).

It has been noted that during the fall of 2009 one Steller sea lion was observed in transit near the action area. This was an extremely rare occurrence, and there is very little likelihood that a Steller sea lion will enter the action area in the future. Therefore, no ESA-listed species other than beluga whales were reviewed in this opinion.

Cook Inlet Beluga Whale – Range

The range of Cook Inlet beluga whales has been defined as the waters of the Gulf of Alaska north of 58° N and freshwater tributaries to these waters, based on available scientific data in 2000 (65 FR 34590, 31 May 2000; MMPA Sec. 216.15(g)). Few beluga sightings occur in the Gulf of Alaska outside Cook Inlet. Laidre et al. (2000) summarized available information on prehistoric to current beluga whale distribution in the Gulf of Alaska, and, with the exception of Yakutat, sightings have been rare and sporadic given the extent of the survey efforts. There were 169,550 cetacean sightings recorded in the Gulf of Alaska prior to the year 2001, excluding Cook Inlet, and only 44 were beluga (Laidre et al. 2000), indicating they are extremely rare in the Gulf of Alaska outside Cook Inlet. Calkins (1989) described beluga whales in Cook Inlet, Prince William Sound, Yakutat Bay, and throughout the coastal waters of the Gulf of Alaska, from the northern portions of Kodiak Island to Yakutat.

A detailed description of the Cook Inlet beluga whale biology may be found in the Conservation Plan (NMFS 2008), and the Proposed Listing Rule (72 FR 19854, April 20, 2007).

Cook Inlet Beluga Whale – Description and Taxonomy

The beluga whale is a small, toothed whale in the family Monodontidae, a family it shares with only the narwhal. Beluga whales are also known as “white whales” because of the adults’ white coloration. Beluga calves are born dark to brownish gray and lighten to white or yellow-white with age. Adult Cook Inlet beluga whales average between 12 and 14 ft in length, although Native hunters have reported some may reach as much as 20 ft (Huntington 2000). Adult beluga males may weigh up to 3,300 pounds while females are typically smaller, weighing up to 3,000 pounds (Nowak 2003). The cervical vertebrae in beluga whales are not fused, allowing them to turn and nod their heads. Instead of a

dorsal fin, beluga whales have a tough dorsal ridge. They also exhibit a relatively small head, fluke, and flippers.

Cook Inlet Beluga Whale – Biology and Behavior

While mating is assumed to occur sometime between late winter and early spring, there is little information available on the beluga whale mating behavior. Beluga whales typically give birth to a single calf every two to three years, after a gestation period of approximately 14 months. Most calving in Cook Inlet is assumed to occur from mid-May to mid-July (Calkins 1983), although Native hunters have observed calving from April through August (Huntington 2000). Alaska Natives described calving areas as the northern side of Kachemak Bay in April and May, off the mouths of the Beluga and Susitna rivers in May, and in Chickaloon Bay and Turnagain Arm during the summer (Huntington 2000). Young beluga whales are nursed for two years and may continue to associate with their mothers for a considerable time thereafter (Reeves et al. 2002). The warmer waters from these freshwater sources may be important to newborn calves during their first few days of life (Katona et al. 1983; Calkins 1989). Surveys conducted from 2005 to 2007 in the upper Inlet by LGL, Inc., documented neither localized calving areas nor a definitive calving season, since calves were encountered in all surveyed locations and months (April-October) (McGuire et al. 2008). The warmer, fresher coastal waters may also be important areas for beluga whales' seasonal summer molt.

Sexual maturity can vary from 4 to 10 years for females and 8 to 15 years for males. It is believed that beluga whales may live more than 30 years, although recent discoveries pertaining to ageing techniques may lead scientists to effectively double these estimates.

Beluga whales normally swim about 2 to 6 miles per hour, but when pursued, can attain a speed of 14 miles per hour. While they usually surface to breathe every 30 to 40 seconds, radio-tracking studies show that they also routinely dive for periods of 9.3 to 13.7 minutes and to depths of 66 to 1,140 ft, presumably for feeding (Nowak 2003).

Beluga whales have a well-developed sense of hearing and echolocation. Most sound reception takes place through the lower jaw, which is hollow at its base and filled with fatty oil. Sounds are conducted through the lower jaw to the middle and inner ears, then to the brain. Beluga whales can hear over a large range of frequencies, from about 40 Hz to 150 kilohertz (kHz) (Au 1993; Johnson 1967; Johnson et al. 1989; Scheifele 1987; White et al. 1978). Their most acute hearing occurs at frequencies between about 9 kHz and 90 kHz. Beluga whales conduct communication and echolocation at relatively high frequencies where they have a lower hearing threshold and greater hearing sensitivity. Studies have shown beluga whales to emit communication calls with an average frequency range from about 2.0 to 5.9 kHz. Echolocation is generally conducted at frequencies greater than 40 kHz. Studies have shown that beluga whales generally produce signals with peak frequencies of 40 to 120 kHz during echolocation, and the intensity of the signal can change with location and background noise levels. Echolocation is presumably used to avoid obstacles and to search for prey (Nowak 2003).

Complementing their excellent hearing is the fact that beluga whales have one of the most diverse vocal repertoires of all marine mammals. They are capable of making a variety of vocalizations, including whistles, buzzes, groans, roars, trills, etc., which lead to their nickname as sea canaries. Their vision is reported to also be well developed; they appear to have acute vision both in and out of water and, as their retinas contain both rod and cone cells, and are believed to see in color (Herman 1980).

Beluga whales are extremely social animals that typically interact together in close, dense groups. Groups of 10 to more than 100 whales have been observed in Cook Inlet. It is unknown whether these represent distinct social divisions (NMFS 2008) although Reeves et al. (2002) mentioned the groups are often of the same sex and age class. Traditional knowledge also suggests that beluga whales maintain family groups (Huntington 2000).

Cook Inlet Beluga Whale – Population Abundance and Trends

The Cook Inlet beluga whale population has probably always numbered fewer than several thousand animals, but in recent years has declined significantly from its historical abundance (NMFS 2008). It is difficult, however, to accurately determine the magnitude of decline due to the paucity of information on the beluga whale population that existed in Cook Inlet prior to development of the region, or prior to modern subsistence whaling by Alaska Natives. With no reliable abundance surveys conducted prior to the 1990s, scientists must estimate historical abundance based on what little data exist. Relying on a survey conducted in portions of Cook Inlet during 1979, Calkins (1989) estimated a population of 1,293 beluga whales. This overall abundance estimate provided by Calkins represents the best available information on historical abundance. For management purposes, NMFS currently considers 1,300 beluga whales as a reasonable estimate of historical abundance.

Comprehensive, systematic aerial surveys of beluga whales in Cook Inlet began in 1994 with the goal of determining the overall abundance and population trend for the species. A decline in abundance of around 47 percent, from an estimate of 653 whales to 347 whales, was documented between 1994 and 1998 (Hobbs et al. 2000). After measures were established in 1999 to regulate subsistence harvests, NMFS expected that the population would grow at a rate between 2 and 6 percent. Abundance estimates from aerial surveys (1999 – 2008) indicate this level of growth did not occur (Fig. 2). Looking at the population estimates since the regulation of subsistence harvests (1999 – 2009) NMFS has documented a population decline of 1.49 percent per year. The 2010 population abundance estimate was 340 whales. A precise comprehensive statistical assessment of population trend is not possible given differences in survey methods and analytical techniques prior to 1994. A straight comparison of the 1,293 beluga estimate from 1979 to the 321 beluga whales estimated for 2009 would indicate a 75 percent decline in 31 years, but with unspecified confidence. NMFS has committed to conducting systematic annual abundance surveys which should reduce uncertainties in population status and growth over time.

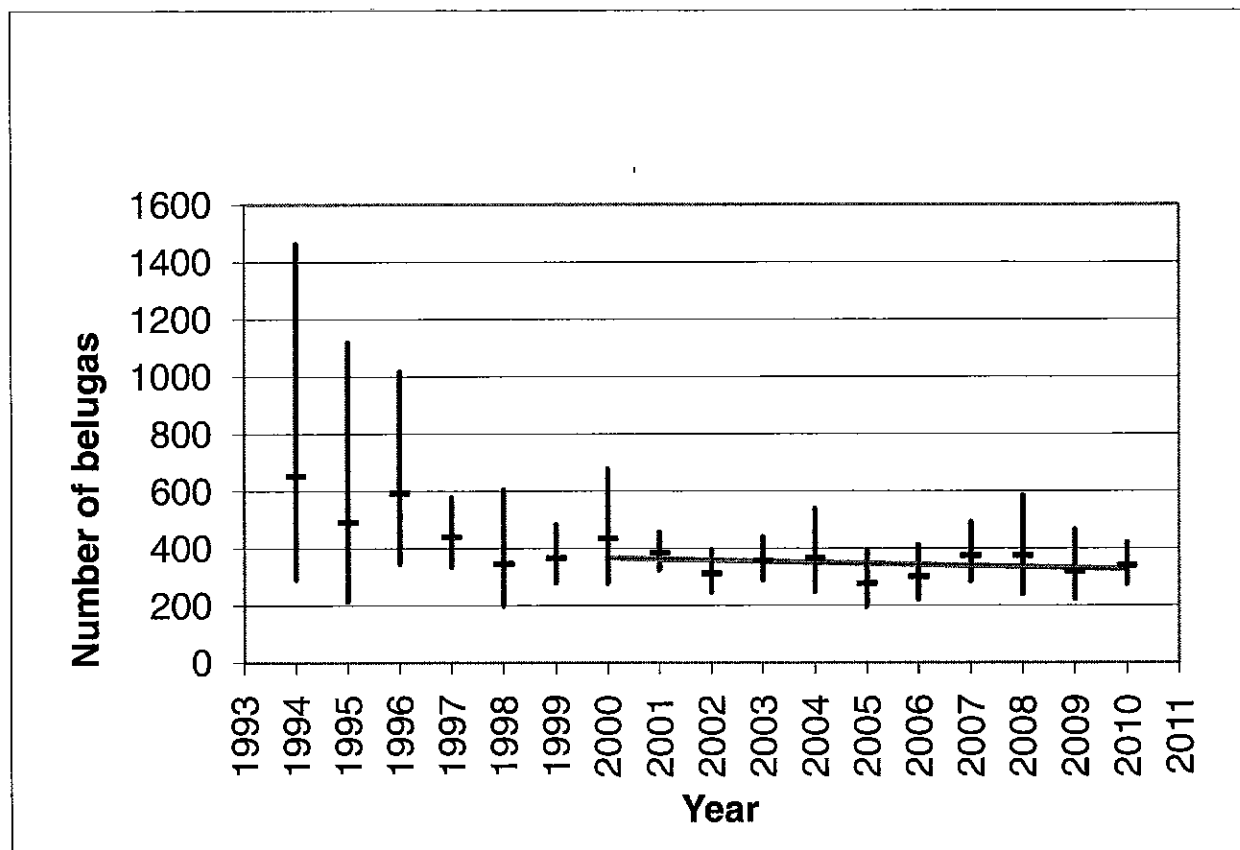


Figure 2. Abundance estimates for beluga whales in Cook Inlet with 95 percent confidence intervals (vertical bars). In the years since a hunting quota was in place (1999-2009), the rate of decline (red trend line) has been -1.49 percent per year.

Within Knik Arm, beluga abundance is highly variable. Fourteen years of aerial surveys conducted during the first weeks of June by NMFS show beluga abundance ranging from 224 to 0 whales (NMFS 2008). Surveys conducted by boat in 2004 reported variable abundance counts in Knik Arm for August through October; 5-130 whales in August, 0-70 whales in September, and 0-105 whales in October (Funk et al. 2005).

Cook Inlet Beluga Whale – Population Viability Analysis and Extinction Risk Assessment

The National Marine Mammal Laboratory published the 2008 Status Review and Extinction Risk Assessment of Cook Inlet Beluga Whales (*Delphinapterus leucas*) (Review). That document included an update of a November 2006 Status Review and responded to issues raised by a panel of independent experts regarding the earlier Status Review. The conclusions of the 2008 Review were:

- The contraction of the Cook Inlet beluga whale population range northward into

upper Cook Inlet makes it far more vulnerable to catastrophic events which have the potential to kill a significant fraction of the population

- The population is not growing at 2 percent to 6 percent per year as had been anticipated since the cessation of unregulated hunting.
- The population is discrete and unique with respect to the species, and if it should fail to survive, it is highly unlikely that Cook Inlet would be repopulated with beluga whales. This would result in a permanent loss of a significant portion of their range.
- The importance of seasonal anadromous fish runs in Cook Inlet to beluga whales is evident. The bulk of their annual nutrition is acquired during the summer months.
- Beluga whales in Cook Inlet are unique in Alaska given their summer habitat is in close proximity to the largest urban area in the state.
- While the impact of disease and parasitism on this population has not been quantified, this population is at greater risk because of its small size and limited range, such that a novel disease would spread easily through this population.
- The population viability analysis (PVA) shows a 26 percent probability of extinction in 100 years (for the model assuming one predation mortality per year and a 5 percent annual probability of an unusual mortality event killing 20 percent of the population). It is likely the Cook Inlet beluga population will continue to decline or go extinct during the next 300 years unless factors that determine its growth and survival are altered in its favor.

The Review also reaffirmed NMFS's earlier position that the Cook Inlet beluga whale stock is discrete and significant in terms of the ESA, and constitutes a species under the definitions of the ESA. The Review included a PVA model that was the most-detailed of any such models for Cook Inlet beluga whales, being age and gender based, and focused on the behavior of a declining population at sizes less than 500 whales. Small population effects, demographic stochasticity, Allee effects, predation mortality, and unusual mortality events were modeled explicitly. The PVA employed 20 sub-models with 11 various assumptions: different predation levels, unusual mortality events, Allee effects, habitat loss, counting/survey errors, and other factors. For each sub-model, 100,000 trials were run to provide a statistical distribution of the stochastic and deterministic variables of the model in order to allow for analysis. The PVA results were then used in the Extinction Risk Analysis (ERA) to estimate the probabilities for the stock to become extirpated within certain time frames. The ERA found that, for the sub-model judged to be the best approximation for the current population, the extinction probability was 26 percent within 100 years.

An important outcome of the ERA was that the extinction probabilities increased dramatically when predation was set for more than one beluga whale mortality per year. We do not have adequate data to accurately evaluate the removal levels from this stock due to killer whale predation or other factors, but we believe annual mortalities could very easily exceed this threshold. This finding has particular significance in assessing the cumulative risks to the Cook Inlet beluga whales. The Environmental Baseline section

has discussions on factors (stressors) known to be, or thought to be, impacting this population. The individual and cumulative contribution of these stressors must be carefully considered in assessing the consequences of this proposed action.

Distribution and Habitat Use

Little information is available on the beluga whale distribution in Cook Inlet prior to 1970; however, in the 1970s and 1980s, beluga sightings occurred across much of lower and upper Cook Inlet (Calkins 1984). For instance, sightings in the Kenai River area were common, and beluga concentrations were reported in Trading Bay and Kachemak Bay (Calkins 1984).

To identify current Cook Inlet beluga habitat use, particularly in winter, Cook Inlet beluga whales were tracked with satellite tags from 1999 through 2003. Data from satellite tagged whales documented that Cook Inlet beluga whales concentrate in the upper Inlet at rivers and bays in the summer and fall, and then tend to disperse into deeper waters, moving to lower Inlet locations in the winter. Beluga whales remain year-round in Cook Inlet, but demonstrate seasonal movement within the Inlet. The timing and location of eulachon and salmon runs have a strong influence on beluga whales' spring and summer movements. Beluga whales are regularly sighted in the upper Inlet beginning in late April or early May, coinciding with eulachon runs in the Susitna River and Twenty Mile River in Turnagain Arm. Belugas may remain in the upper Inlet into the fall, but appear to move west and south, coinciding with the coho run. Beluga whales regularly gather in Eagle Bay and elsewhere on the east side of Knik Arm, and sometimes in Goose Bay on the west side of Knik Arm.

During winter months, these whales concentrate in deeper waters in the lower Inlet past Kalgin Island, with occasional forays into the upper Inlet, including the upper ends of Knik and Turnagain Arms. Winter distribution does not appear to be associated with river mouths, as it is during the warmer months. The spatial dispersal and diversity of winter prey likely influences the wider beluga winter range throughout the Inlet.

Traditional Ecological Knowledge (TEK) of Alaska Natives and systematic aerial survey data document a contraction of the summer range of Cook Inlet beluga whales (Rugh et al. 2010). While beluga whales were once abundant and frequently sighted in the mid and lower Inlet during summer, they are now primarily concentrated in the upper Inlet. This constriction is likely a function of a reduced population seeking the highest quality habitat that offers the most abundant prey, most favorable feeding topography, best calving areas, and the best protection from predation. An expanding population would likely use the Inlet more extensively.

In Knik Arm, beluga whales generally are observed arriving in May and often use the area all summer to feed on various salmon runs, moving with the tides. There is more intensive use of Knik Arm in August and through the fall, coinciding with the coho run. Beluga whales often gather in Eagle Bay between the months of May and November (Hobbs et al. 2005) and have been observed in Eagle River from June to November as far inland as 1¼ miles upstream (CH2M Hill 1997). The whales gather elsewhere on the east

side of Knik Arm and sometimes in Goose Bay on the west side of Knik Arm. Beluga whales often retreat to the lower portion of Knik Arm during low tides (NMFS 2008). Access to these areas and to corridors between these areas is important.

While it is difficult to quantify the importance of various habitats in terms of the health, survival, and recovery of the Cook Inlet beluga whale, NMFS believes certain areas are particularly important. For instance, during ice-free months beluga whales often concentrate near shallow tidal flats, river mouths, or estuarine areas (NMFS 2008). Beluga whales in Cook Inlet often aggregate near the mouths of rivers and streams where salmon runs occur during summer and fall. Their winter distribution does not appear to be associated with river mouths, as it is during the warmer months. Alaska Natives described calving areas within Cook Inlet as the northern side of Kachemak Bay in April and May, off the mouths of the Beluga and Susitna rivers in May, and in Chickaloon Bay and Turnagain Arm during summer (NMFS 2008).

Cook Inlet Beluga Whale – Feeding

Both scientific research and Alaska Native TEK say beluga whales may move hundreds of miles to exploit changes in prey distribution (i.e., beluga whales follow their prey). For instance, beluga whale movements within upper Cook Inlet coincide with anadromous fish migrations where beluga whales often aggregate near the mouths of rivers and streams where salmon runs occur.

Dense concentrations of prey appear essential to beluga whale feeding behavior, but the relationship between beluga whale concentrations and salmon concentrations is not fully known (NMFS 2008). Beluga whales exhibit high site fidelity and may persist in an area with fluctuating fish runs or may tolerate certain levels of disturbance from boats or other anthropogenic activities in order to feed. On the other hand, it is apparent the movements and feeding distribution of beluga whales are not simply explained by when and where the most fish are. For example, beluga whales today are seen less frequently at the mouth of the Kenai River, despite high salmon returns to the river. Because beluga whales do not always feed at the streams with the highest runs of fish, water depth and fish density may be more important than sheer numbers of fish in their feeding success (NMFS 2008). In upper Cook Inlet, beluga whales concentrate offshore from several important salmon streams and appear to use a feeding strategy which takes advantage of the bathymetry in the area. The channels formed by the river mouths and the shallow waters act as a funnel for salmon as they move past waiting beluga whales. Dense concentrations of prey may be essential to beluga whale foraging. Hazard (1988) hypothesized that beluga whales were more successful feeding in rivers where prey were concentrated than in bays where prey were dispersed. Fried et al. (1979) noted that beluga whales in Bristol Bay fed at the mouth of the Snake River, where salmon runs are smaller than in other rivers in Bristol Bay. However, the mouth of the Snake River is shallower, and hence may concentrate prey. Research on beluga whales in Bristol Bay suggests these whales preferred certain streams for feeding based on the configuration of the stream channel (Frost et al. 1983). This study theorized beluga whales' feeding efficiencies improve in relatively shallow channels where fish are confined or concentrated. The waters of upper Knik Arm are predominately shallow mudflats cut by narrow tidal guts and channels. Being adjacent to

several anadromous fish streams, this area contains these physical and biological features which provide important feeding habitat.

Cook Inlet beluga whales are opportunistic feeders and feed on a wide variety of prey species, focusing on specific species when they are seasonally abundant. Eulachon is an important early spring food resource for beluga whales in Cook Inlet. Eulachon first enter the upper Inlet in April, with two major spawning migrations occurring in the Susitna River in May and July. The early run is estimated at several hundred thousand fish and the later run at several million (Calkins 1989).

Five Pacific salmon species (Chinook, chum, coho, pink, and sockeye) spawn in rivers throughout Cook Inlet in the summer (Moulton 1997, Moore et al. 2000). Salmon escapement numbers and commercial harvests have fluctuated widely throughout the last 40 years and there is no clear correlation between salmon runs and beluga whale population numbers; however, samples of harvested and stranded beluga whales have shown consistent summer blubber thicknesses (NMFS unpubl. data). The occurrence of beluga whale concentrations and adult salmon returns throughout the spring and summer indicates these are likely important feeding opportunities.

In the summer, as eulachon runs begin to diminish, beluga whales rely heavily on salmon as a primary prey resource. Beluga whale hunters in Cook Inlet reported one whale having 19 adult king salmon in its stomach (Huntington 2000). In July 2005, NMFS (unpubl. data) observed a 4.3 m (14 ft 3 in) male with 12 coho salmon, totaling 27.9 kg (61.5 lbs), in its stomach.

In the fall, as anadromous fish runs begin to decline, beluga whales again return to consume the fish species found in nearshore bays and estuaries. This includes cod (*Gadus*) species as well as other bottom-dwellers, such as Pacific staghorn sculpin (*Leptocottus armatus*), and flatfishes (*Pleuronectiformes spp.*), such as starry flounder (*Platichthys stellatus*) and yellowfin sole. This change in diet in the fall is consistent with other beluga populations known to feed on a wide variety of food. Flatfish are typically found in very shallow water and estuaries during the warm summer months and move into deeper water in the winter as coastal water temperatures cool (though some may occur in deep water year-round).

In the winter, Cook Inlet beluga whales concentrate in deeper waters in lower Inlet past Kalgin Island and make deep feeding dives, likely to feed on such prey species as flatfish, cod, sculpin (*Cottidea spp.*), and pollock. The narrowing of the Inlet in this area and the presence of Kalgin Island just south of the forelands may cause upwelling and eddies that concentrate nutrients or act as a "still-water shelter area" for migrating anadromous fish such as salmon, eulachon, and smelt, which are known beluga prey species. The Kalgin Island area may also be rich in biological productivity; for instance, crustaceans are known to occur south of the island (Calkins 1983). The Kalgin Island area may serve as a late-winter staging area for eulachon prior to migration to their natal streams in upper Cook Inlet. If these fish and crustaceans generally are present in this area during late winter, they may be an important food source for beluga whales in the winter. Saffron

cod migrate inshore during winter for spawning (Cohen et al. 1990). Pacific cod move to progressively deeper water as they age, spawning in deeper, offshore waters in winter (Cohen et al. 1990). Beluga whales will also occasionally travel into the upper Inlet in winter, including the upper ends of Knik and Turnagain Arms.

The seasonal availability of energy-rich prey such as eulachon, which may contain as much as 21 percent oil (Payne et al. 1999), and salmon are very important to the beluga whale energetics (Abookire and Piatt 2005; Litzow et al. 2006). Native hunters in Cook Inlet have stated that beluga whale blubber is thicker in the summer, after the whales have fed on eulachon and salmon, than in early spring prior to anadromous fish runs. In spring, the whales were described as thin with blubber only 5 – 8 cm (2 – 3 in) thick compared to the fall when the blubber may be up to 30 cm (1 ft) thick (Huntington 2000). Eating such fatty prey and building up fat reserves throughout spring and summer may allow beluga whales to sustain themselves during periods of reduced prey availability (e.g., winter) or other adverse impacts, by using the energy stored in their blubber to meet metabolic needs. Mature females have additional energy requirements.

Cook Inlet Beluga Whale – Breeding and Calving Habitat

Very little is known about beluga whale breeding behavior, and it is difficult to identify beluga breeding habitat with any certainty. The shallow waters of the upper Inlet may play an important role in reproduction. Since newborn beluga whales do not have the thick blubber layer of adults, they benefit from the warmer water temperatures in the shallow tidal flats areas where fresh water empties into the Inlet, and hence it is likely these regions are used as nursery areas. TEK of Alaska Natives report that the mouths of the Beluga and Susitna Rivers, as well as Chickaloon Bay and Turnagain Arm, are calving and nursery areas for beluga whales (Huntington 2000).

The known presence of pregnant females in late March, April, June, and July (Mahoney and Shelden 2000; Vos and Shelden 2005, NMFS unpubl. data) suggests breeding may occur in late spring into early summer. Calves depend on their mother's milk as their sole source of nutrition, and lactation lasts up to 23 months (Braham 1984), though young whales begin to consume prey as early as 12 months of age (Burns and Seaman 1986). Therefore, the summer feeding period is critical to pregnant and lactating beluga whales.

Knik Arm is also used extensively in the summer and fall by cow/calf pairs. Surveys by LGL (Funk et al. 2005, McGuire and Kaplan 2009) noted a relatively high representation of calves in the uppermost part of Knik Arm. The mouth of Knik Arm has been reported to be transited in the summer and fall by cow/calf pairs (Cornick and Kendall 2008), presumably moving into the upper reaches of Knik Arm. McGuire et al. (2008) photographically identified 37 distinct beluga whales with calves in the upper Inlet during 2005-2007. Calves were seen in all areas of their study (Susitna delta, Knik Arm, Chickaloon Bay/Southeast Fire Island, and Turnagain Arm), and they were unable to determine distinct calving areas (McGuire et al. 2008). However, when corrected for effort, Knik Arm had the largest number of calf sightings within the areas observed.

Cook Inlet Beluga Whale – Proposed Critical Habitat Designation

Beluga whales generally occur in shallow, coastal waters, often in water barely deep enough to cover their bodies (Ridgway and Harrison 1981). While it is difficult to quantify the importance of various habitats in Cook Inlet for the health, survival, and recovery of the beluga whale, NMFS believes certain areas are particularly important.

At present, no critical habitat has been designated for the Cook Inlet beluga whales. A proposed rule to designate critical habitat for the Cook Inlet beluga whales under the ESA was published in 2009 (Figure 3); however, no final rule has been issued. The proposed critical habitat includes two geographic areas of marine habitat in Cook Inlet comprising 7,809 square kilometers (74 FR 230) and are bounded by Mean Higher High Water (MHHW) datum on the upland. Also included in the proposed designation are the lower reaches of the Susitna River, Little Susitna River, Chickaloon River and Kenai River. Other tidally influenced tributaries of Cook Inlet are not included in the proposal.

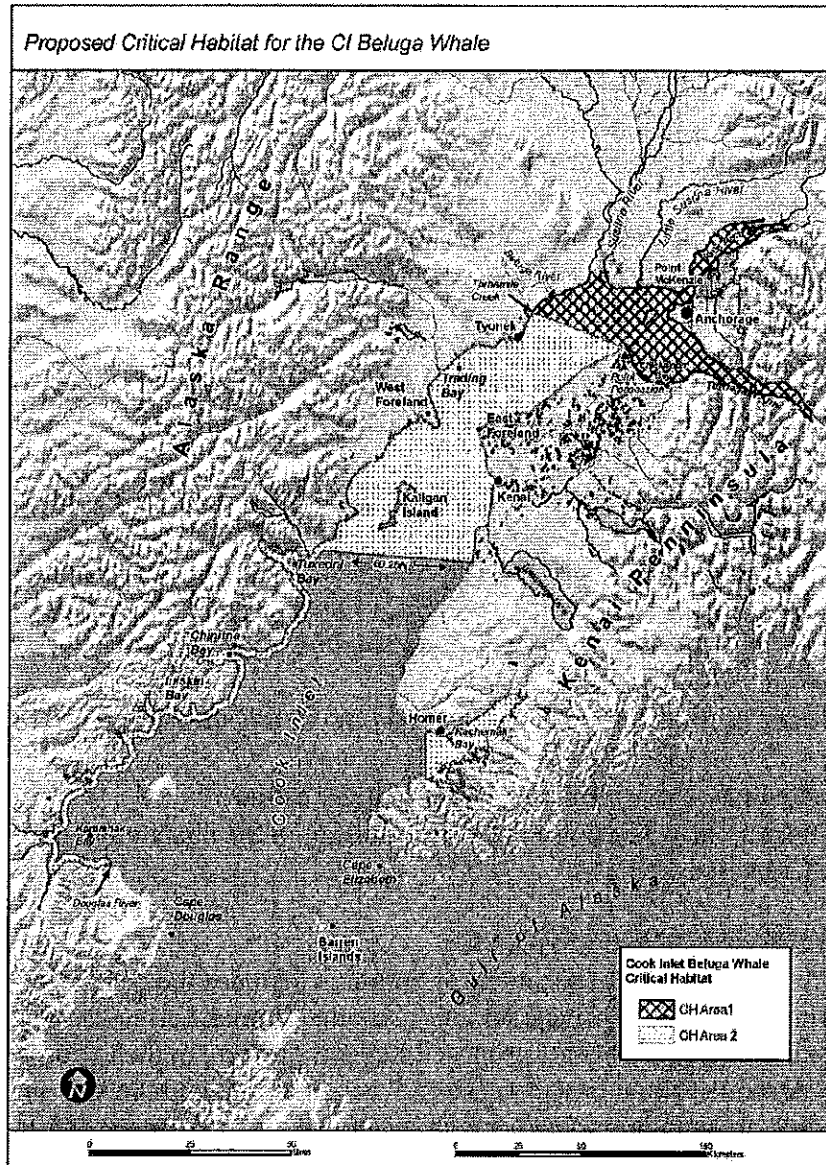


Figure 3. Proposed critical habitat for the Cook Inlet beluga whale

The proposed Area 1 comprises 1,918 square kilometers of marine habitat in Cook Inlet extending northeast of a line drawn from a point at the mouth of Threemile Creek ($61^{\circ} 08.5$ N, $151^{\circ} 04.4$ W) to a point at Point Possession ($61^{\circ} 02.1$ N, $150^{\circ} 24.3$ W). Also included are waters of the Susitna River south of latitude $61^{\circ} 20.0$ N, Little Susitna River south of latitude $61^{\circ} 18.0$ N, and Chickaloon River north of latitude $60^{\circ} 53.0$ N.

The proposed Area 2 comprises 5,891 square kilometers of Cook Inlet marine waters south of a line drawn from a point at the mouth of Threemile Creek (61° 08.5 N, 151° 04.4 W) to a point at Point Possession (61° 02.1 N, 150° 24.3 W). Also included in Area 2 are waters within two nautical miles seaward of MHHW along the western shoreline of Cook Inlet between latitude 61° 25 N and the mouth of the Douglas River (59° 04 N, 153° 46.0 W), all waters of Kachemak Bay east of longitude 151 40.0 W, and the waters of the Kenai river downstream of the Warren Ames bridge in the city of Kenai.

The proposed ruling also includes designation of five environmental attributes that are deemed essential to the conservation of the CI beluga whale. These attributes, or primary constituent elements, are:

- Shallow intertidal and subtidal waters of Cook Inlet (depths less than 30 ft at MLLW) that are within five miles of high and medium flow anadromous fish streams
- Fish species deemed to be the primary prey species of the Cook Inlet beluga, include: Chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), Pacific eulachon (*Thaleichthys pacificus*), Pacific cod (*Gadus macrocephalus*), walleye pollock (*Theragra chalcogramma*), saffron cod (*Eleginus gracilis*), and yellowfin sole (*Platichthys stellatus*)
- The absence of toxins or other agents of a type or amount harmful to beluga whales
- Unrestricted passage within or between critical habitat
- The absence of in-water noise at levels resulting in the abandonment of habitat by Cook Inlet beluga whales

III. ENVIRONMENTAL BASELINE

By regulation, the environmental baseline for opinions includes the past and present impacts of all state, Federal, or private actions and other human activities in the action area, the anticipated impacts from all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions that are contemporaneous with the consultation in process (50 CFR §402.02). The environmental baseline for this opinion includes the effects of several activities that affect the survival and recovery of threatened and endangered species in the action area. The following information summarizes the primary human and natural phenomena in Cook Inlet that are believed to affect the beluga whale status and trends in the action area.

The Cook Inlet beluga whale population may be affected by various natural and anthropogenic factors, including: subsistence harvest removals, strandings, pollution, predation, disease, contamination, fisheries interactions, shipping and vessel traffic, small stock size, restricted summer range, and habitat loss or alteration. While a number of known and potential threats have been identified, there is not enough known about the effect of each specific threat to definitively know the level of impact that each threat has

on the Cook Inlet beluga whale (NMFS 2008). In addition, Cook Inlet beluga whales may be affected by multiple threats at any given time, compounding the impacts of the individual threats (NMFS 2008).

The documented decline of the Cook Inlet beluga whale population during the mid-1990s has been attributed to subsistence harvest removals at a level that this small population could not sustain. In response, cooperative efforts between NMFS and subsistence users have dramatically reduced subsistence harvests. These harvest reductions should have allowed the Cook Inlet beluga population to recover. However, abundance data collected during the past several years show that the population is not recovering as expected following the promulgation of subsistence harvest regulations.

Cook Inlet Beluga Whales and Habitat

Knik Arm and the action area are regularly used by Cook Inlet beluga whales. Beluga whales appear to use the crossing site primarily for transit and milling, with some foraging, as they follow prey north into upper Knik Arm in August. Fewer beluga whales have been observed in the project area during the months of June and July, although past NMFS aerial monitoring has recorded up to 61% of all beluga observations within Knik Arm during those months. Beluga whales remain visible in Eagle Bay until ice cover in November, and satellite-tagged whales were tracked within Knik Arm during winter months, although such excursions were rare. Beluga whales appear to remain in Knik Arm as long as ice-free conditions persist, as this habitat could provide increased foraging opportunity before winter, increased protection for calves from predation, or both (Cornick and Saxon-Kendall 2009).

Beluga whale movements within Knik Arm are highly correlated with tides (Funk et al. 2005). Whales ascend to upper Knik Arm on the flooding tide, feed on salmon, and hold in the waters by Eagle Bay and the mouth of Six Mile Creek during incoming and outgoing mid tides. Beluga whales in the lower reaches of Knik Arm tend to stay close to shore, following the tide through the narrows within 1 km of either shoreline. Whales moving up Knik Arm tend to prefer the eastern shoreline, following the channel along Eagle Bay, while whales moving out of Knik Arm tend to hug the western shoreline (Cornick and Saxon-Kendall 2009).

Boat and land-based observations were conducted in Knik Arm from July 2004 through July 2005 (Funk et al. 2005). Land-based observations were conducted from nine stations along the shore of Knik Arm. The three primary stations were located at Cairn Point, Point Woronzof, and Birchwood. The majority of the beluga whales were observed north of Cairn Point, and temporal use of Knik Arm was related to tide height. During the study period, most beluga whales stayed in the upper portion of Knik Arm north of Cairn Point. Approximately 90 percent of observations occurred during the months of August through November, and only during this time were whales consistently sighted in Knik Arm. The relatively low number of sightings throughout the rest of the year suggested the whales were using other portions of Cook Inlet. In addition, relatively few beluga whales were sighted in the spring and early to mid-summer months. Beluga whales predominantly frequented Eagle Bay (mouth of Eagle River), Eklutna, and the stretch of

coastline in between, particularly when they were present in greater numbers.

The most commonly observed behaviors by beluga whales in Knik Arm include traveling, feeding (often suspected feeding behavior), diving, and resting (Markowitz, et al. 2005). Much of the mid to upper portions of Knik Arm are shallow mudflats with sharply cut tidal channels. Beluga whales utilize such areas near the mouths of anadromous fish streams as feeding habitat. Eagle Bay, north east of the KAC, is a notable beluga site in that it is near the mouth of an important salmon stream, Eagle River, and provides a deep channel that is utilized by these whales during incoming and low tides.

Human Induced Factors

The upper Cook Inlet region is the major population center of Alaska, with the 2008 Municipality of Anchorage population at 279,243, the Matanuska-Susitna Borough at 62,426, and the Kenai Peninsula Borough at 50,556 (U.S. Census Bureau). Such large numbers of people in a relatively small area present added concerns to the natural environment and to Cook Inlet beluga whales.

Development

Southcentral Alaska is the State's most populated and industrialized area. Many cities, villages, ports, airports, treatment plants, refineries, highways, and railroads are situated on or very near to Cook Inlet. This development has resulted in both the loss and alteration of near shore beluga habitat and changes in habitat quality due to vessel traffic, noise, and pollution. There is concern that increased development may prevent beluga whales from reaching important feeding areas in upper Knik Arm. Frequent use of shallow near shore and estuarine habitats makes beluga whales particularly prone to regular interaction with human activities (Perrin 1999), and are thus likely to be affected by those activities.

Beluga whales are not uniformly distributed throughout Cook Inlet, but are predominantly found in near shore waters. Where beluga whales must compete with people to use near shore habitats and coastline development (both construction and operations) leads to the direct loss of this preferred habitat. Indirect alteration of habitat may occur due to bridges, boat traffic, in-water noise, and discharges that affect water quality. Most beluga habitat in Cook Inlet remains essentially intact, however, extensive sections of Turnagain Arm shoreline have been developed (e.g., rip rap and railroad construction), as have the shorelines in the Anchorage area.

Port facilities in Cook Inlet are found at Anchorage, Mackenzie, Tyonek, Drift River, Nikiski, Kenai, Anchor Point, and Homer. The Port of Anchorage (POA) is a deep draft facility, Alaska's largest seaport and the main port of entry for southcentral and interior regions. It exists along eastern lower Knik Arm in an area that is heavily used by beluga whales. Operations began at the POA in 1961 with a single berth. Since 1964, the POA has expanded to a five-berth terminal that moves more than four million tons of material across its docks each year (POA 2009). Construction associated with the current Marine Terminal Development Project has been ongoing on a seasonal basis since 2006, and has

included both in-water and out-of-water activities in four areas (North Backlands, Barge Berths, South Backlands, and North Extension). The POA Intermodal Expansion Project will rebuild and enlarge docking facilities, improve loading/unloading facilities, provide additional working space to handle shipped fuel, freight and other materials, and improve access by road and rail transportation serving the Port. The new expanded POA will provide efficient transport of goods into and out of Anchorage for the next 50 years and more.

In-water activities during the POA Expansion Project have an annual take authorization of 34 whales. During 2009 construction work at the port, a total of thirteen (13) beluga whales were reported to have been taken. These takes were determined by the presence of these animals within the designated harassment zones, and not by behavioral criteria.

POA maintenance dredging has occurred annually since 1965. The current operations and maintenance plan at the POA authorizes the Corps to dredge to -35 ft MLLW. The footprint dredged at the POA fluctuates annually, varying from 95 acres in 1999 to 117 acres in 2004. Over the last nine years the average size of the dredged footprint has been about 100 acres. The amount of dredging required maintaining the Port varies from year to year, with a maximum of about 2.1 million cubic yards (cy) of material dredged in 2004. Maintenance dredging is conducted by one or more dredges and lasts from mid-May through November, depending on the weather. Two to five barge trips per day transport about 1,500 cy of material from each dredge to the disposal site (USACE 2008). Dredging along coastal waterways has been identified as a concern with respect to the Saint Lawrence beluga whales (DFO 1995). There, dredging of up to 600,000 cubic meters of sediments re-suspended contaminants into the water column and seriously affected the beluga whales. The Saint Lawrence beluga whale recovery plan contains recommendations to reduce the dredge amount and to develop more environmentally sound dredging techniques. While the volume of dredging in Cook Inlet is comparable to St. Lawrence (more than 844,000 cy in 2003 at the POA), the material does not appear to contain harmful levels of contaminants (USACE 1995, 2008).

Port MacKenzie is along western lower Knik Arm and development began in 2000 with the construction of a barge dock. The first shipments arrived in July 2001. Additional construction has occurred since then and Port MacKenzie currently consists of a 500-foot bulkhead barge dock, a 1,200-foot deep-draft dock with a conveyor system, a landing ramp, and over 8,000 acres of adjacent uplands; however, plans call for a bulk loading facility with deep-draft capability. The Drift River facility in Redoubt Bay is used primarily as a loading platform for shipments of crude oil. The docking facility there is connected to a shoreside tank farm and designed to accommodate tankers in the 150,000 deadweight-ton class. Nikiski is home to several privately owned docks (including those belonging to oil and gas companies such as Tesoro and Conoco Philips). Activity at Nikiski includes the shipping and receiving of anhydrous ammonia, dry bulk urea, liquefied natural gas, petroleum products, sulfuric acid, caustic soda, and crude oil.

Joint Base Elmendorf-Richardson

This military installation at Anchorage is home to both Air Force and Army forces. The

base maintains and operates a runway near and airspace directly over Knik Arm. Aircraft noise can be loud within the action area. Cargo is routinely transported between the POA and this base, including the off-loading of jet fuel. The Eagle River Flats Impact Area (ERFIA) has been used for weapons training since the 1940s. Recent acoustic research has found noise from detonations on the ERFIA can exceed 160 dB re: 1 μ Pa within Cook Inlet, including high-use areas in Eagle Bay. Currently, live-fire weapons training within ERFIA is restricted to winter months only, when specified ice conditions are met. However, the Army is proposing resumption of year-round activity here and has released a draft Environmental Impact Statement for that purpose. NMFS is currently consulting under the ESA with the Army on the effects of this resumption on Cook Inlet beluga whales.

Vessel Traffic

Most of Cook Inlet is navigable and used by various classes of water craft. Vessels traveling in Knik Arm and Cook Inlet can be a threat to beluga whales. The potential for ship strikes exists whenever ships and beluga whales are in the area at the same time. While ship strikes have not been definitively confirmed in a Cook Inlet beluga whale death, in October 2007 a dead whale washed ashore with “wide, blunt trauma along the right side of the thorax” (NMFS 2008), suggesting a ship strike was the cause of the injury. Vessel traffic can also produce noise disturbance to beluga whales and pollution from the vessels may decrease the quality of their habitat.

There are eight port facilities located in Cook Inlet (Anchorage, Point MacKenzie, Tyonek, Drift River, Nikiski, Kenai, Anchor Point, and Homer). Commercial shipping occurs year round, with container ships transiting between the Seattle/Puget Sound areas and Anchorage. Other commercial shipping includes bulk cargo freighters and tankers. Currently, with the exception of the Fire Island Shoals and the POA, no other large-vessel routes or port facilities in Cook Inlet occur in high value beluga whale habitat. Various commercial fishing vessels operate throughout Cook Inlet, with some very intensive use areas associated with salmon and herring fisheries. Sport fishing and recreational vessels travel between Anchorage and several popular fishing streams that enter the upper Inlet. Several improved and unimproved small boat launches exist along the shores of upper Cook Inlet and the Knik Arm, including a float system for small watercraft near Ship Creek, maintained by the Municipality of Anchorage. Other launches are near the Knik River Bridge and the community of old Knik.

Due to their slower speed and straight-line movement, ship strikes from large vessels are not believed to pose a significant threat to Cook Inlet beluga whales. Beluga whales are regularly sighted in and around the POA (Rugh et al. 2005) passing near or under vessels (Blackwell and Greene 2002), indicating that these animals may have a high tolerance of large vessel traffic. However, smaller boats that travel at high speed and change direction often present a greater threat. In Cook Inlet, beluga whales concentrate near river mouths, predisposing them to strikes by high speed watercraft associated with sport fishing and general recreation. High-speed vessels operating in these whale concentration areas have an increased probability of striking a whale, as evidenced by observations of Cook Inlet beluga whales with propeller scars (Burek 1999, McGuire et al. 2009). Small boats and

jet skis, which are becoming more abundant in Cook Inlet and the Knik Arm, are also more likely to approach and disturb any whales that are observed.

Noise

Beluga whales are known to be among the most adept users of sound of all marine mammals, and use sound rather than sight for many important functions. They are often found in turbid waters in northern latitudes where darkness extends over many months. Beluga whales use sound to communicate, locate prey, and navigate, and may make different sounds in response to different stimuli. Beluga whales produce high frequency sounds that they use as a type of sonar for finding and pursuing prey, and likely for navigating through ice-laden waters.

In Cook Inlet, beluga whales must compete acoustically with natural and anthropogenic sounds. Human-induced noises include large and small vessels, aircraft, oil and gas drilling, marine seismic surveys, pile driving, shore based activities, dredging, filling, and other events. The effects of human-caused noise on beluga whales and associated increased background noises depend on several factors including the intensity, frequency, and duration of the noise, the location and behavior of the whale, and the nature of the acoustic environment. High frequency noise diminishes more rapidly than low frequency noises. Sound also dissipates more rapidly in shallow waters and over soft bottoms (sand and mud). Much of upper Cook Inlet is characterized by its shallow depth, sand/mud bottoms, and high background noise from currents and glacial silt (Blackwell and Greene 2002), thereby making it a poor environment for propagating acoustics.

Cook Inlet also experiences significant levels of aircraft traffic from the Ted Stevens Anchorage International Airport, JBER, and several smaller runways. Lake Hood and Spenard Lake in Anchorage are heavily used by recreational seaplanes. Even though sound is attenuated by the water surface, Blackwell and Greene (2002) found aircraft noise can be loud underwater when jet aircraft are directly overhead. Richardson (1995) discovered that beluga whales in the Beaufort Sea will dive or swim away when low-flying (less than 500 m) aircraft passed directly above them. However, beluga survey aircraft flying at approximately 244 m (800 ft) in Cook Inlet observed little or no change in beluga swim directions (Rugh et al. 2000). This is likely because beluga whales in Cook Inlet have habituated to routine small aircraft overflights. Beluga whales may be less sensitive to aircraft noise than vessel noise, but individual responses may be highly variable and depend on previous experiences, beluga activity at the time of the noise, and characteristics of the noise.

Water Quality and Pollution

The waters of Knik Arm are brackish, with salinities ranging from 4 to 6 practical salinity units (equivalent to grams of dissolved solids per kg of seawater) north of Cairn Point. Water temperatures range from freezing (about 31°F) to 63°F or more (in surface pockets observed during the summer months). Measurements of suspended sediment also vary. Several locations near the river mouths exhibit concentrations of up to 1,000 milligrams of sediment per liter (mg/L) between water surface and depths of 15 ft while sediment concentrations at greater water depths have measured more than 4,000 mg/L (Smith et al.

2005). The average natural turbidity of upper Cook Inlet and Knik Arm typically ranges from 400 to 600 nephelometric turbidity units. The turbulent nature of the system mixes the water and maintains relatively high dissolved oxygen concentrations throughout the entire water column.

At the mouths of the streams and rivers that flow into Knik Arm, fresh water interacts with the sea water to create an identifiable zone. Since the sea water is denser, the fresh water floats on top until it is mixed by tides and currents, creating a freshwater lens that is sometimes less turbid than the sea water. The lenses extend relatively short distances from the river mouths in the direction of the current and may provide important fish habitat.

The Conservation Plan for the Cook Inlet Beluga Whale (NMFS 2008) states contaminants are a concern for the sustained health of Cook Inlet beluga whales. The principal sources of pollution in the marine environment are: 1) discharges from industrial activities not entering municipal treatment systems; 2) discharges from municipal wastewater treatment systems; 3) runoff from urban, mining, and agricultural areas; and 4) accidental spills or discharges of petroleum and other products (Moore et al. 2000). Contaminants released into the beluga whales' habitat can affect their overall health (Becker et al. 2000). Cook Inlet beluga whales appear to have lower levels of contaminants stored in their bodies than do other beluga whale populations; however, the impacts of contaminants on beluga whales in Cook Inlet are unknown (NMFS 2008). Becker et al. (2000) concluded that little is known about the role of multiple stressors in animal health and that future research should examine their interaction and effects on recruitment in declining populations such as the Cook Inlet beluga whale.

Since 1992, tissues from Cook Inlet beluga whales have been collected from subsistence harvested and stranded beluga whales and analyzed for contaminants as part of the Alaska Marine Mammal Tissue Archival Program. These samples were compared to samples taken from beluga whales in two Arctic Alaska locations (Point Hope and Point Lay), Greenland, Arctic Canada, and the Saint Lawrence estuary in eastern Canada (Becker et al. 2000). Tissues were analyzed for polychlorinated biphenyls (PCBs), chlorinated pesticides (such as DDT), and heavy metals. PCB's and DDT are byproducts of agricultural and industrial activities and may impair marine mammal health and reproductive abilities. Arctic and Cook Inlet beluga whales had much lower concentrations of PCBs and DDT than the Saint Lawrence animals. When compared to the Arctic Alaska samples, Cook Inlet beluga whales had about one-half the concentrations of total PCBs and total DDT.

Also examined were concentrations of various substances stored in the liver. Cadmium and mercury were lower in the Cook Inlet population than in the Arctic Alaska populations, while levels of methyl-mercury were similar to other Arctic Alaska populations. However, copper levels were two to three times higher in the Cook Inlet animals than in the Arctic Alaska animals and similar to the Hudson Bay animals.

Becker et al. (2000) also compared tissue levels of total PCBs, total DDT, and a variety of

other chemicals in these beluga whale stocks and found that Cook Inlet beluga whales had the lowest concentrations of all. The effects of lower concentrations of PCBs and chlorinated pesticides on animal health may be of less significance for the Cook Inlet animals than for other beluga whale populations. Becker et al. (2000) concluded that little is known about the role of multiple stressors in animal health and that future research should examine their interaction and effects on population recruitment for a declining population, such as the beluga whale in Cook Inlet.

Storm water runoff has the potential to carry numerous pollutants from the Municipality of Anchorage into Cook Inlet. Runoff can include pollution coming from streets, construction and industrial areas, and airports. Runoff can also carry hazardous materials from spills and contaminated sites into Cook Inlet. The effect of these pollutants on beluga whales is unknown. Numerous releases of petroleum hydrocarbons have been documented by the POA, JBER, and the Alaska Railroad Corporation. The POA transfers and stores petroleum oils, as well as other hazardous materials and all significant spills and leaks that occurred at the POA since 1992 have been reported. Past spills have been documented at each of the bulk fuel facilities within the POA, and also on JBER's property (POA 2003a and POA 2003b). JBER is listed on the National Priorities List because of its known or threatened releases of hazardous substances, pollutants, or contaminants. Spills have also been reported at the Alaska Rail Road Corporation rail yard. In 1986, petroleum seeped into Ship Creek from the nearby rail yard, and several oil spills occurred in 2001 (ADEC 2009). Freight handling activities have historically caused numerous surface stains and spills at the rail yard. Information on additional spills in the area can be found on ADEC's Contaminated Sites Database website (<http://www.dec.state.ak.us/spar/csp/>).

Deicing and anti-icing chemicals are used from October through May and may be used on aircraft, tarmacs, and runways at the five airports in Anchorage (Stevens International Airport, Merrill Field, JBER, Lake Hood, and Lake Spenard). Deicing and anti-icing of aircraft and airfield surfaces are required by the Federal Aviation Administration to ensure the safety of passengers. Depending on the application, deicing activities utilize different chemicals. For instance, ethylene glycol and propylene glycol are used on aircraft for anti-icing and deicing purposes, whereas potassium acetate and urea are used to deice tarmacs and runways. Much of the deicing materials or their break down products eventually enters Cook Inlet. The potential impacts on beluga whales from deicing agents entering Cook Inlet have not been analyzed and cannot be determined at this time.

Ten communities currently discharge treated municipal wastes into Cook Inlet. Wastewaters entering these plants may contain a variety of organic and inorganic pollutants, metals, nutrients, sediments, bacteria and viruses, and other emerging pollutants of concern (EPOCs). Wastewater from the Municipality of Anchorage, Nanwalek, Port Graham, Seldovia, and Tyonek receive only primary treatment, while wastewaters from Eagle River, Girdwood, Homer, Kenai, and Palmer receive secondary treatment (NMFS 2008). Primary treatment means that only materials easily collected from the raw wastewater (such as fats, oils, greases, sand, gravel, rocks, floating objects,

and human wastes) are removed, usually through mechanical means. The primary effluent is discharged directly into Cook Inlet, where it becomes diluted. The effect of the effluent's pollutants on beluga whales is unknown and there have been limited studies to determine this effect. Wastewater undergoing secondary treatment is further treated to substantially degrade the biological content of the sewage (such as in human and food wastes).

Little is known about EPOCs and their effects on beluga whales in Cook Inlet. EPOCs include endocrine disruptors (substances that interfere with the functions of hormones), pharmaceuticals, personal care products, and prions (proteins that may cause an infection), amongst other agents that are found in wastewater and biosolids. The potential impacts on beluga whales from pollutants and EPOCs in wastewater entering Cook Inlet cannot be defined at this time.

Discharges of wastes from vessels are regulated by the United States Coast Guard. Potential discharges include oily waste, sewer water, gray water (e.g., shower water), and garbage. Gray water and sewer water, provided that they are free from oil waste, may be discharged in the open sea. However, by law, no discharges of any kind are allowed within three miles of land. Ships can potentially release pollutants and non-indigenous organisms into Cook Inlet through the discharge of ballast water. It is a recognized worldwide problem that aquatic organisms picked up in ship ballast water, transported to foreign lands, and dumped into non-native habitats, are responsible for significant ecological and economic perturbations costing billions of dollars. The National Ballast Information Clearinghouse reported that more than five million metric tons of ballast water was released from Homer to Anchorage between 1999 and 2003. Invasive species were found just off the POA in a 2004 survey by the Smithsonian Environmental Center. The effect of discharged ballast water and possible invasive species from such discharges on beluga whales and their habitat is unknown.

Subsistence Harvest

The Cook Inlet beluga whale is hunted by Alaska Natives for subsistence purposes and for traditional handicrafts. The MMPA provides an exemption from its prohibitions that allows for the harvest of marine mammals by Alaska Natives for these purposes. Alaska Natives have legally harvested Cook Inlet beluga whales prior to and after passage of the MMPA in 1972. The effect of past harvest practices on the Cook Inlet beluga whale population is significant. While a harvest occurred at unknown levels for decades, NMFS believes the subsistence harvest levels increased substantially in the 1980s and 1990s. Reported subsistence harvests between 1994 and 1998 can account for the estimated stock's decline during that interval. The observed decline during that period and the reported and estimated harvest rates (including estimates of whales which were struck and lost, and assumed to have perished) indicate these harvest levels were unsustainable.

Figure 4 summarizes subsistence harvest data from 1987 to 2010 (NMFS unpubl. data). Although information on the harvest from 1993 was originally reported as 17 beluga whales, consultation with local Native hunters estimated the annual number of beluga

whales taken during this time to be greater (DeMaster 1995). There was no systematic Cook Inlet beluga harvest survey in 1994. Instead, harvest data were compiled at the November 1994 beluga hunter meeting, including two beluga whales taken by hunters from Kotzebue. The most thorough Cook Inlet beluga subsistence harvest surveys were completed during 1995 and 1996. While some local hunters believed that the 1996 estimate of struck and lost is positively biased, the 1995 to 1996 take estimates are considered reliable (Angliss et al. 2001). Given that there was no survey during 1997 or 1998; NMFS estimated the subsistence harvest from hunter reports. The known subsistence harvest by Alaska Natives during 1995-1998 averaged 77 beluga whales annually.

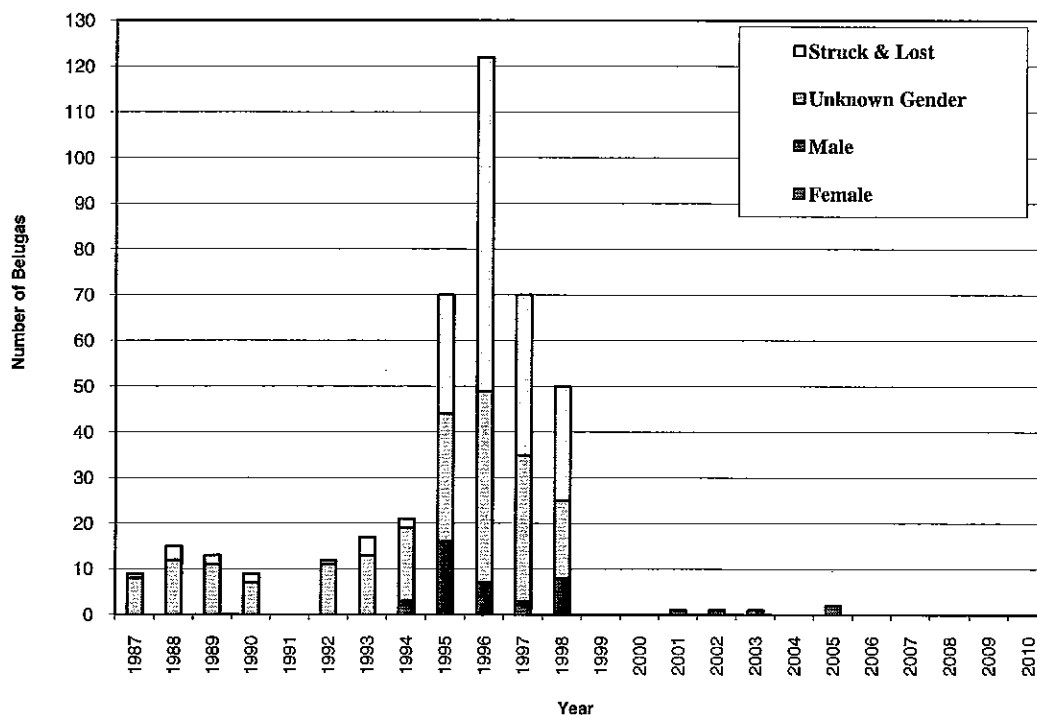


Figure 4: Summary of known Cook Inlet beluga whale subsistence harvest from 1987-2010.

The harvest, which was as high as 20 percent of the population in 1996, was sufficiently high to account for the 14 percent annual rate of decline in the population during the period from 1994 through 1998 (Hobbs et al. 2000). In 1999 there was no harvest as a result of a voluntary moratorium by the hunters that spring and a permanent moratorium in 2000 that required a cooperative agreement between NMFS and affected Alaska Native organizations for an allowable harvest. During 2000-2003 and 2005-2006 NMFS entered

into co-management agreements for the Cook Inlet beluga subsistence harvest. Between 2000 and 2007, subsistence harvests were 0, 1, 1, 1, 0, 2, 0, and 0 whales, respectively; with no cooperative agreements signed after 2007.

Sections 101(b) and 103(d) of the MMPA require that regulations prescribed to limit Alaska Native subsistence harvest be made only when the stock in question is designated as depleted pursuant to the MMPA and following an Administrative Hearing on the record. NMFS had an administrative hearing in December 2000 where interim harvest regulations for 2001-2004 were developed and another administrative hearing in August 2004 to prepare the long term harvest plan. NMFS published the Cook Inlet Beluga Whale Subsistence Harvest Draft Supplemental Environmental Impact Statement in December 2007 that provided four alternatives on the long term harvest for Cook Inlet beluga whales. The Cook Inlet Beluga Whale Subsistence Harvest Final Supplemental Environmental Impact Statement, with a set harvest plan, was published in June 2008 and, long-term harvest regulations were implemented in October 2008.

Poaching and Illegal Harassment

Due to their distribution within the most-densely populated region in Alaska and their approachable nature, the potential for poaching beluga whales in Cook Inlet still exists. Although NMFS maintains an enforcement presence in upper Cook Inlet, the area they have to cover is extensive. While poaching is a possible threat, no poaching incidents have been confirmed to date. NMFS Enforcement has investigated several incidences of reported harassment of Cook Inlet beluga whales, but to date there have been no convictions. The potential, however, for both poaching and illegal harassment exists.

Personal Use, Subsistence and Recreational Fishing

Personal use gill net fisheries occur in Cook Inlet. In the spring, fishing for eulachon (hooligan) is popular in Turnagain Arm, with no bag or possession limits. The two most significant areas where eulachon are harvested in personal use fisheries are the Twentymile River (and shore areas of Turnagain Arm near Twentymile River) and Kenai River. Other areas where eulachon are harvested include the Susitna River and Little Susitna River and their tributaries, the Placer River, and shoreline areas of Turnagain Arm and Cook Inlet north of the Ninilchik River. Annual harvests have ranged from 2.2 to 5 tons over the past decade. The personal use harvest of eulachon is possibly under-reported as some participants may confuse their harvests as being subsistence and not personal use.

Recreational fishing is a very popular sport in Alaska, as evidenced by the intensive fishing during salmon runs and the large number of charter fishing operations. In upper Cook Inlet there are numerous recreational fishing areas that primarily target salmon, including the hundreds of drainages of the Susitna River; Little Susitna River; west Cook Inlet streams; and areas around Anchorage such as Ship Creek. Recreational fishing for salmon in Ship Creek is the most popular stream fishery in the Anchorage area. In lower Cook Inlet, recreational fishing for groundfish such as halibut, rockfish and lingcod are also popular. There is a recreational fishery for littleneck clams, butter clams, and razor clams. NMFS is unaware of any beluga whales injured or killed in Cook Inlet due to

personal use, subsistence, or recreational fisheries. However, the most likely impacts from these fisheries include the operation of small watercraft in stream mouths and shallow waters, ship strikes, displacement from important feeding areas, harassment, and prey competition.

Commercial Fishing: Several commercial fisheries occur in Cook Inlet waters and have varying likelihoods of interacting with beluga whales (either directly or via competition for fish) due to differences in gear type, species fished, timing, and location of the fisheries. Interactions refer to entanglements, injuries, or mortalities occurring incidental to fishing operations. Given that beluga whales concentrate in upper Cook Inlet during summer (Rugh et al. 2000), fisheries occurring in those waters during could have a higher likelihood of interacting with beluga whales.

Incidental Take

The term incidental take in regards to commercial fishing refers to the catch or entanglement of animals that were not the intended target of the fishing activity. Marine mammal injury or mortality reports incidental to commercial fishing operations have been obtained from fisheries reporting programs (self-reporting or logbooks), observer programs, and reports in the literature. The only reports where beluga whales were fatally taken incidental to the commercial salmon gillnet fishing in Cook Inlet are from the literature. Murray and Fay (1979) stated that salmon gillnet fisheries in Cook Inlet caught five beluga whales in 1979. Incidental take rates by commercial salmon gillnet fisheries in the Inlet were estimated at three to six beluga whales per year during 1981 – 1983 (Burns and Seaman 1986). Neither report, however, differentiated between the set gillnet and drift gillnet fisheries. There have been sporadic reports over the years of single beluga whales becoming entangled in fishing nets; however, mortalities could not be confirmed.

NMFS placed observers in the Cook Inlet salmon drift net and upper and lower Inlet set gillnet fisheries in 1999 and 2000. During the two years of observations, only three sightings of beluga whales occurred and no beluga whale injuries or mortalities were reported. Furthermore, during the period 1990 and 2000, fishermen's voluntary self-reports indicated no beluga whale mortalities from interactions with commercial fishing. NMFS has found the current rate of direct mortality from commercial fisheries in Cook Inlet appears to be insignificant and should not delay recovery of these whales.

Reduction of Prey

Aside from direct mortality and injury from fishing activities, commercial fisheries may compete with beluga whales in Cook Inlet for salmon and other prey species. There is strong indication that these whales are dependent on access to relatively dense concentrations of high value prey throughout the summer months. Native hunters often stated that beluga whales appear thin in early spring (due to utilizing the fat in their blubber layer during winter), and tend to sink rather than float when struck. Any diminishment in the ability for beluga whales to reach or utilize spring/summer feeding habitat, or any reductions in the amount of available prey, may impact the energetics of these animals and delay recovery.

The current salmon management plan for the State of Alaska oversees the Cook Inlet fisheries in the lower and northern (upper) districts of the Inlet. Most of these fisheries occur "upstream" of the river mouths and estuaries where beluga whales typically feed. Whether the escapement into these rivers, having passed the gauntlet of the commercial fisheries, is sufficient for the well being of Cook Inlet beluga whales is unknown. Furthermore, the amount of fish required to sustain this population is unknown.

Oil and Gas

Much of the Cook Inlet region overlies reserves of oil and natural gas. Upper Cook Inlet and the Kenai Peninsula have an association with the petroleum industry that dates back to the 1950s. There are 16 platforms in upper Cook Inlet, 12 of which are active today. Oil spills are a significant concern with regard to offshore oil and gas production, petroleum product shipment, and general vessel traffic. It is difficult to accurately predict the effects of oil on Cook Inlet beluga whales (or any cetacean) because data are lacking on the metabolism of this species. Nevertheless, some generalizations can be made regarding impacts from oil on individual whales based on present knowledge. Oil spills that occurred while Cook Inlet beluga whales were present could result in skin contact with the oil, respiratory distress from hydrocarbon vapors, contaminated food sources, and displacement from feeding areas. Actual impacts would depend on the extent and duration of contact, and the characteristics (age) of the oil. Cook Inlet beluga whales could be affected through residual oil from a spill even if they were not present during the oil spill. Also, response actions may impact whales due to intensive vessel traffic or specific technologies, such as *in situ* burning of oil.

If an oil spill were concentrated in an area that is used by large number of beluga whales, it is possible that a whale could inhale enough vapors from a fresh spill to affect its health. Contaminated food sources and displacement from feeding areas also may occur as a result of an oil spill.

Tourism and Whale Watching

Tourism is a growing component of the State and regional economies, and wildlife viewing is an important part. Visitors highly value the opportunity to view the region's fish and wildlife, and opportunities to view the beluga whale are especially valuable due to their uniqueness. Beluga whales are very common to upper Cook Inlet and typically occur in fairly large groups. Because these waters are easily accessible from Anchorage, this presents an excellent opportunity for whale watching. Whale watching is not, in itself, harmful to whales. It presents concerns due to vessel noise, proximity to the whales (approach distance and harassment), and intrusion into important whale habitats. Concern is warranted for whale watching operations that approach beluga whales close enough to harass or that enter into confined or important habitat areas. Currently no commercial whale watching operations exist in upper Cook Inlet, and we have no information suggesting such activity might occur in the near future.

Research

Research on Cook Inlet beluga whales and their habitat within Cook Inlet can also cause disturbance. Research often requires the use of boats and/or planes to conduct surveys, adding to the vessel traffic, noise, and pollution near the action area. The following research has occurred within Cook Inlet.

Since 1993, NMFS has conducted annual aerial surveys in June and July 1995 to document the beluga whale distribution and abundance in Cook Inlet. In addition, to help establish beluga whale distribution in Cook Inlet throughout the year, aerial surveys were conducted every one to two months between June 2001 and June 2002 (Rugh et al. 2004).

The Knik Arm Bridge and Toll Authority collected baseline environmental data on beluga whale activity to be used to evaluate the potential impact of a proposed bridge crossing in Knik Arm, north of Cairn Point. Boat and land-based observations were conducted in Knik Arm from July 2004 through July 2005 (Funk et al. 2005).

Researchers using boats have collected acoustic data at and near the POA. An underwater noise survey was conducted to measure and evaluate construction noise levels incidental to a test pile driving program in October 2007. Detailed underwater sound level measurements were conducted in late September through early October 2008 during various in-water construction activities (Scientific Fishery Systems, Inc. 2009).

Since 2005, researchers from LGL Alaska Research Inc have photographed beluga whale in upper Cook Inlet as part of a photographic-identification project on Cook Inlet beluga whales, conducted for the National Fish and Wildlife Foundation, Chevron, and Conoco Phillips Alaska, Inc (McGuire et al. 2009). Photographs are taken from small boats and on land, and later analyzed and cataloged into an extensive database.

Natural Factors

Strandings

Beluga whale strandings in upper Cook Inlet are not uncommon, with most reported in Turnagain Arm. More than 700 whales stranded in upper Cook Inlet since 1988 (NMFS unpubl. data). Mass strandings (involve two or more whales) primarily occur in Turnagain Arm and Knik Arm, and often coincided with extreme tidal fluctuations ("spring tides") and twice coincided with a killer whale sighting (NMFS unpubl. data). NMFS 2006 status review (Hobbs et al. 2006) recognized that stranding was a constant threat to the Cook Inlet beluga whale recovery. NMFS determined this declining population could not easily recover from multiple mortalities that resulted from a mass stranding event. For instance, in 2003 there were five separate live stranding events involving 115 individual beluga whales (i.e., assuming no whale stranded more than once). In 2003, more than 46 beluga whales were stranded in Turnagain Arm and were out of the water for about 10 hours waiting for the tide to return. From this one event, five beluga whales were thought to have died as a direct consequence, based upon beach cast carcasses found in the following days. Prolonged stranding events that lasts more than a few hours may result in significant mortalities. The annual abundance estimates continue to confirm a declining whale population and stranding events may represent a

significant threat to the conservation and recovery of these whales.

Predation

Although infrequent, it has been documented that killer whales prey upon beluga whales in Cook Inlet (witnessed and necropsies). The numbers of killer whales that are reported in the upper Inlet appear to be small. There may be a single pod with five or six individuals that has extended its feeding territory into Cook Inlet. However, given the small population size of the Cook Inlet beluga whales, predation may have a significant effect on the beluga whales' recovery and abundance. On average one Cook Inlet beluga whale is estimated to be killed per year by killer whales (Shelden et al. 2003). Killer whale predation effects were also addressed in status reviews conducted by NMFS in 2006 and 2008 where the models demonstrated that killer whale predation on an annual basis could significantly impact recovery. In addition to directly reducing the beluga population, killer whale presence in upper Cook Inlet may also increase live stranding events. As such, NMFS considers killer whale predation to be a potentially significant threat to the conservation and recovery of these whales.

Environmental Change

There is now widespread consensus within the scientific community that atmospheric temperatures on earth are increasing (warming) and that this will continue for at least the next several decades. There is also consensus within the scientific community that this warming trend will alter current weather patterns. Cook Inlet is a very dynamic environment which experiences continual change in its physical composition; there are extreme tidal changes, strong currents, and tremendous amounts of silt being added from glacial scouring. For example, an experienced and knowledgeable Alaska Native beluga hunter observed that the Susitna River (an area frequented by beluga whales, especially during anadromous fish runs) has filled in considerably during the past 40 – 50 years (pers. comm. P. Blatchford 1999 via B. Smith, NMFS). He told of one persistent channel in the river that was more than 40 ft deep but was filled in with sediment. Since beluga whales are still seen in the area today, they appear able to adapt to physical changes in their habitats.

The climate in Cook Inlet is driven by the Alaska Coastal Current (a low salinity river-like body of water that flows through the Pacific Ocean and along the coast of Alaska with a branch that flows into Cook Inlet) and the Pacific Decadal Oscillation (PDO). PDO is similar to El Nino except it lasts much longer (20 – 30 years in the 20th century) and switches between a warm phase and a cool phase. Phase changes of the PDO have been correlated with changes in marine ecosystems in the northeast Pacific; warm phases have been accompanied by increased biological productivity in coastal waters off Alaska and decreased productivity off the west coast of Canada and the US, whereas cold phases have been associated with the opposite pattern.

Prior to 2004 temperatures in the Gulf of Alaska were relatively stable, but in mid 2004 temperatures warmed and stayed warm until late 2006. Sampling of oceanographic conditions (via GAK-1) just south of Seward, Alaska has revealed anomalously cold conditions in the Gulf of Alaska beginning winter of 2006 – 2007; “deep (more than

150m) temperatures are the coldest observed since the early 1970s” (Weingartner 2007). Deep water temperatures are anticipated to be even colder in winter 2007 – 2008 due to deep shelf waters remaining cold throughout the 2007 summer, and Gulf of Alaska temperatures in spring 2008 are predicted to be even colder than in spring 2007 (Weingartner 2007).

The change in water temperature may in turn affect zooplankton biomass and composition. Plankton are mostly influenced by changes in temperature, which may affect their metabolic and developmental rates, and possibly survival rates (Batten and Mackas 2007). Data collected by Batten and Mackas (2007) demonstrated that mesozooplankton (planktonic animals in the size range 0.2 – 20 mm) biomass was greater in warm conditions, and that zooplankton community composition varied between warm and cool conditions, thus potentially altering their quality as a prey resource. In Cook Inlet, mesozooplankton biomass has increased each year from 2004 to 2006; however, sampling from late 2006 to early 2007 suggests biomass values are decreasing; a change most certainly driven by changes in climate (Batten 2007). Therefore, changes in temperature effect changes in zooplankton, which in turn may influence changes in fish composition, and hence, alter the quality and types of fish available for beluga whales. While El Nino events have the potential to affect sea surface temperatures, the effects from the 1998 El Nino warming event in lower Cook Inlet were lessened by upwelling and tidal mixing at the entrance to Cook Inlet (Piatt et al. 1999). It is likely that the physical structure of the Inlet and its dominance by freshwater input acts to buffer these waters from periodic and short-term El Nino events.

Beluga whale use of Cook Inlet, and particularly, feeding habitat, has been correlated to the presence of tidal flats and related bathymetry. Their preference for shallow waters found in Knik Arm, Turnagain Arm, and the Susitna River delta undoubtedly relates to feeding strategy, as has been reported for beluga whales in Bristol Bay (Fried et al. 1979). Frost et al. (1983) theorized beluga whales’ feeding efficiencies improve in relatively shallow channels where fish are confined or concentrated. There is evidence these areas are being lost through the deposition of glacial materials. The senescence of these habitats will likely reduce the capacity of the upper Inlet to provide the needs for this population.

At this time however, the data are insufficient to assess the effects (if any exist) of environmental change on Cook Inlet beluga whale distribution, abundance, or recovery.

IV. EFFECTS of the ACTION

Here we consider the specific aspects of the KAC that may adversely affect Cook Inlet beluga whales. These effects include both direct and indirect effects (effects occurring later in time). Because the types and magnitude of expected effects will differ from construction and operation, these are described separately.

Direct Effects of the Action

A: Construction

Noise

Construction has the potential to result in takes of beluga whales by noise. Temporary disturbance or localized displacement reactions are the most likely to occur. No takes by serious injury or death are anticipated, given the planned monitoring and mitigation.

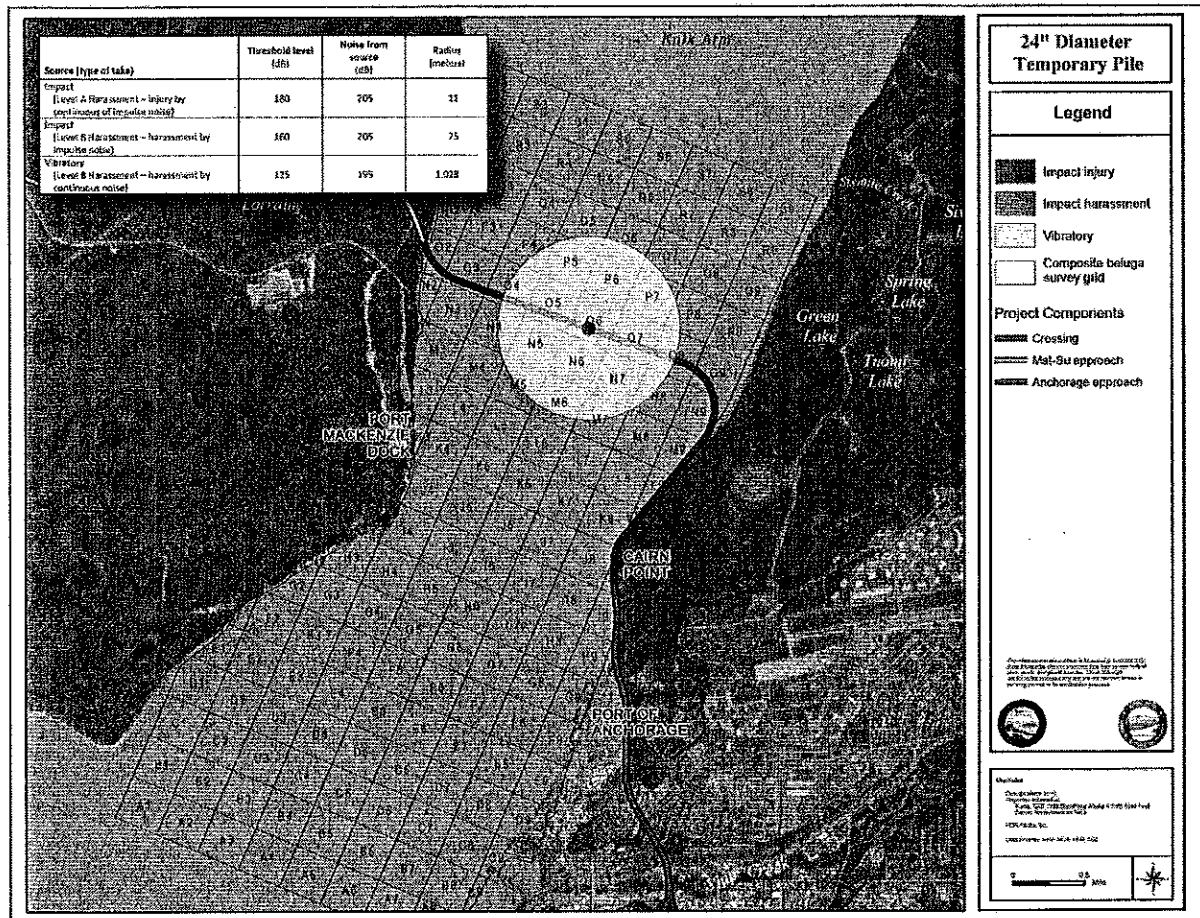


Figure 5. Noise safety zone projections for 24 inch pile driving.

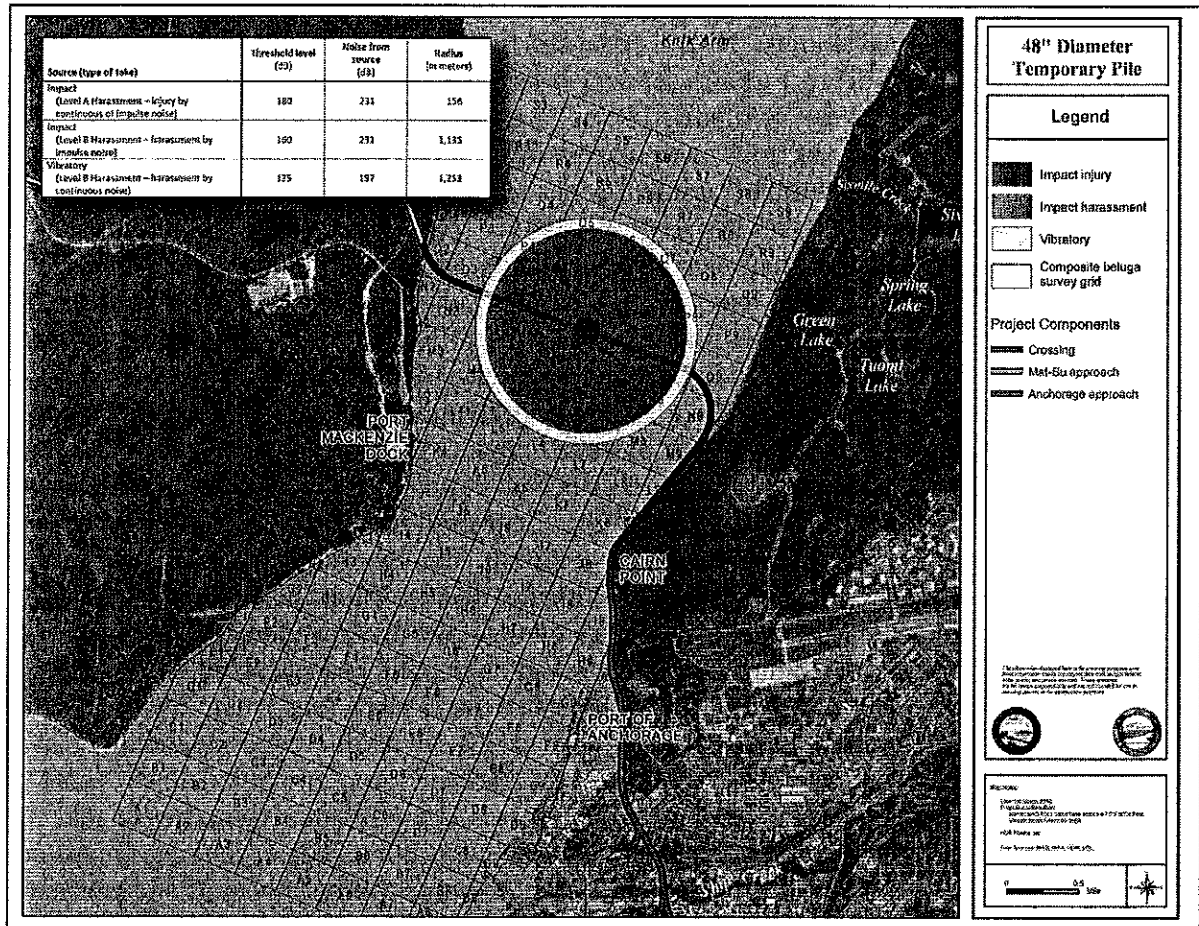


Figure 6. Noise safety zone projections for 48 inch pile driving.

In general, noise associated with coastal development has the potential to harass beluga whales that may be present around the specific action area. Beluga whales use sound for vital life functions, and introducing sound into their environment could be disrupting to those behaviors. Sound (hearing and vocalization/echolocation) serves four main functions for odontocetes (toothed whales and dolphins). These include: (1) providing information about their environment; (2) communication; (3) enabling remote detection of prey; and (4) enabling detection of predators. The distances to which sounds are audible depend on source level and frequency, ambient noise levels, physical habitat characteristics (e.g., water temperature, depth, substrate type), and sensitivity of the receptor (Richardson et al. 1995). Impacts to beluga whales exposed to loud sounds include possible mortality (either directly from the noise or indirectly based on the reaction to the noise), injury and/or disturbance ranging from severe (e.g., permanent abandonment of vital habitat) to mild (e.g., startle). Pile driving and other construction activities could cause behavioral harassment; however, neither physical injury nor mortalities (often described as Level A takes) are anticipated due to the nature of the operations and mitigation measures.

Temporary or permanent hearing impairment is a possibility when beluga whales are exposed to very loud sounds. NMFS considers the Level A in-water harassment threshold to be 180 dB re 1 μ Pa-m for cetaceans. The threshold for Level B harassment (i.e., non-injurious takes) from pulsed noise (e.g., impact pile driving) is 160 dB re 1 μ Pa-m and 125 dB re 1 μ Pa-m from non-pulsed noise (e.g., vibratory pile driving, chipping). Figures 5 and 6 depict these harassment zones for placement of 24 and 48 inch piling using impact hammering and vibratory placement. The permanent piling would be constructed using drilled shaft technology. This technology utilizes an oscillating hydraulic device that would have significantly less sound energy associated with it. No in-water noise data were found regarding drilled shafts, but the absence of a large-mass energy source such as found in impact and vibratory drivers would seem to reasonably support this assumption. It is possible, however, that different (i.e., higher) frequency noise is associated with drilled shaft placement than impact/vibratory methods. While higher frequency noise may occur with drilled shaft methods (and would be closer to the best hearing frequencies for beluga whales), the overall noise levels would still be expected to be lower and to attenuate more rapidly than low frequency noise. Several aspects of the planned monitoring and mitigation measures for the KAC project are designed to detect marine mammals occurring near pile driving and demolition activities, and to avoid exposing them to sound that could potentially cause hearing impairment (e.g., mandatory shut down zones) and minimize disturbance (e.g., shut down if allocated takes used, for large groups and groups with calves). In addition, marine mammals will be given a chance to leave the area during soft start and ramp-up procedures to avoid exposure to full energy pile driving. In those cases, the avoidance responses of the animals themselves will likely reduce or eliminate any possibility of hearing impairment. Hearing impairment is measured in two forms: temporary threshold shift and permanent threshold shift.

When permanent threshold shift (PTS) occurs, there is physical damage to the sound receptors in the ear. PTS is presumed to be likely if the hearing threshold is reduced by 40 dB (i.e., 40 dB of TTS) (Southall et al. 2007). PTS has never been measured in marine mammals despite some hearing threshold studies exposing beluga whales to pulses up to 208 dB (Finneran et al. 2002), 28 dB louder than NMFS's current Level A harassment threshold. Based on TTS studies (discussed below), proposed mitigation measures, and source levels for the KAC, NMFS does not expect that Cook Inlet beluga whales will be exposed to levels that could elicit PTS (i.e., no Level A harassment is anticipated).

To date, no studies relating TTS onset to pile driving sounds have been conducted for any cetacean species. Because noise from pile driving would not be a one-time exposure, as with most human development and exploration activities, a time component must be incorporated into any effects analysis. Experiments with marine mammals show a nearly linear relationship between sound exposure level and duration of exposure: the longer an animal is exposed, the lower the level required to produce TTS (Kastak & Schusterman 1999; Schlundt et al. 2000; Nachtigall et al. 2003). Using auditory evoked potentials (AEP) methods, Nachtigall et al. (2004) repeated his 2003 study and found TTS of approximately 4 to 8 dB following nearly 50 minutes of exposure to the same frequency

noise (center frequency 7.5 kHz) at 160 dB re 1 μ Pa-m (193-195 dB re 1 microPa2-s [SEL]). TTS recovery occurred within minutes or tens of minutes.

The noise from pile placement and removal and drilled-shaft installation and effects these activities have on ambient underwater noise will be temporary. Based on sound modeling presented in the Biological Assessment, sound associated with impact pile placement will attenuate to below acoustic harassment thresholds at a distance from the construction area ranging from 64 m to 1,135 m (210 to 3,724 feet) depending on the pile diameter. Similarly, for vibratory pile placement, the distances to these threshold isopleths range from 1,028 m to 1,253 m (3,373 to 4,111 feet). Based on data from the aforementioned studies, the fact that pile driving would occur only for a short intervals of time, and animals would not be exposed to sound levels at or above 180 dB due to proposed mitigation, NMFS anticipates that TTS, if it does occur, would not last more than a few minutes and would not likely result in impacts to vital life functions such as communication and foraging.

The most likely beluga whale response to pile-driving noise is expected to be short-term, localized avoidance. For example, beluga whales in the MacKenzie River estuary in the Beaufort Sea moved away during construction on an artificial island, but did not leave the area of construction (Richardson 1995). Cook Inlet beluga whales have continued to use habitat in Knik Arm despite heavy disturbance and underwater noise from maritime operations, maintenance dredging, aircraft operations, and pile driving for the Port of Anchorage expansion. This beluga whale behavior may, however, be taken as evidence of a possible high motivation to reach important habitat, rather than as an indication that the noise is not bothersome to the whales.

Some beluga whales repeatedly exposed to construction noise may habituate to the sounds and, upon subsequent exposures, may not change their behavior or distribution when exposed to those sounds. The proposed construction activities may not have substantial effects on these habituated individuals.

Areas in upper Knik Arm most frequented by whales at high tide are about 15 miles from the Crossing, and it is unlikely that whales in those areas will be displaced, excluded from habitat, or exposed to greater risk of stranding by pile-driving sounds. Eagle Bay is an important beluga whale habitat site about six miles from the Crossing. Beluga whales consistently occur here during the fall months, and use this bay and the lower reaches of Eagle River for foraging. The deeper waters of Eagle Bay are occupied by these whales during low tides that prevent them from reaching the more shallow mudflats of the upper Arm. This is an important consideration with respect to noise impacts. Beluga whale distribution within Knik Arm is limited by tidal height. During low tides, these whales must retreat to deeper waters between Eagle Bay, Goose Bay, and the KAC alignment. Thus, acoustic exposure to project noises may be greater during low tide periods.

High ambient noise levels in the area of the Crossing may reduce the severity of potential noise impacts to belugas, as related to pile driving and removal. Ambient noise levels are typically higher than 120 dB re 1 μ Pa in the action area. As such, 125 dB re 1 μ Pa is to be

used as the threshold for Level B harassment (NMFS 2009).

To minimize impacts of construction noise on beluga whales, all in-water impact and vibratory pile-driving activities for temporary pile installation and removal associated with docks, moorage, and pier templates will be conducted outside of the period of high beluga whale density in Knik Arm, from August 1 through November 30. This will substantially reduce the chance of exposing beluga whales to KAC project pile-driving noise. Furthermore, marine mammal observers and passive acoustics will be used during pile placement and other construction activities to reduce incidental takes. This includes a shut-down plan if beluga whales approach the safety radii.

Vessels

Vessel traffic in Knik Arm will temporarily increase to support construction of the KAC project. However, the number of motorized construction vessels will be approximately 27 percent (14 out of 52) of expected construction vessels. The increase in vessel activity will occur throughout the in-water construction phase of the project. Potential direct impacts to beluga whales from vessel traffic include increased noise, harassment of animals in the form of disturbance, and vessel collision that could result in possible serious injuries or death. Beluga whales may display avoidance reactions when approached by watercraft, particularly small, fast-moving craft that can maneuver quickly and unpredictably.

Due to their slower speed, ship strikes from construction vessels are not expected to pose a significant threat to Cook Inlet beluga whales. Larger vessels that do not alter course or motor speed around these whales seem to cause little, if any, reaction (NMFS 2008). Beluga whales are regularly sighted in and around the Port of Anchorage (Rugh et al. 2005) passing near or under vessels (Blackwell and Greene 2002), indicating that these animals may have a high tolerance of large vessel traffic. However, smaller boats that travel at high speed and change direction often present a greater threat.

Vessel traffic associated with the POA, Port MacKenzie, and other sites or activities commonly occurs in the action area. Despite the regularity of vessel movement in and out of Knik Arm, ship strikes have not been definitively confirmed as causing a Cook Inlet beluga whale death (NMFS 2008). Because of their slower speed and linear movement, large vessels, such as those to be used in constructing the KAC, are not expected to pose a substantial threat to Cook Inlet beluga whales (NMFS 2008).

Construction vessels to be used during KAC project construction will be similar to the vessels currently used at the POA and Port MacKenzie. It is estimated that construction of the KAC project will require up to 52 marine vessels during peak construction periods, 14 of which will be motorized (27 percent). Vessel noise will be transmitted through water and will vary in duration and intensity. Broadband source levels for tugs have been measured at 145 to 170 dB re 1 μ Pa (Richardson 1995). Broadband source levels for small ships and supply vessels have been measured at 170 to 180 dB re 1 μ Pa (Richardson 1995). Based on estimates, the loudest vessel noise generated during construction will be produced by ships ranging in length from 55 to 85 m (180 to

279 feet), with source levels ranging from 170 to 180 dB re 1 μ Pa. Sound from a vessel of this size will attenuate below 125 dB re 1 μ Pa between 86 m and 233 m (282 and 764 feet) from the source. The amount of noise from the small number of engine-equipped construction vessels will be minimal, given that the source levels will be approximately 156 dB re 1 μ Pa. The noise from an outboard crew vessel, in the absence of the larger and louder vessels, will attenuate to the 125 dB ambient level within 22 m (72 feet) and, therefore, be barely detectable above existing ambient noise levels at those distances.

Impacts of construction vessels on ambient noise levels will depend on the number and types of vessels employed for construction. Vessel traffic associated with bridge construction activities will be an irregularly occurring, temporary, continuous noise source (versus an impulse noise); although the noise produced by a vessel will be continuous, it will occur intermittently during the construction period.

Beluga reactions to vessels depend on whale activities and experience, habitat, boat type, and boat behavior (Richardson 1995) and may include behavioral responses, such as altered headings; fast swimming; changes in vocalizations; and changes in dive, surfacing, and respiration patterns. For example, belugas in the MacKenzie Estuary appeared to react less to a stationary dredge as opposed to a moving one, despite similar noise levels created by the vessels (Fraker 1977). Because of the frequency of marine traffic in their habitats, Cook Inlet beluga whales are familiar with the presence of large and small vessels. Belugas are frequently sighted in and around the Port of Anchorage, the Port MacKenzie dock, and the small boat launch adjacent to the outlet of Ship Creek (Blackwell and Greene 2002; NMFS 2008; Markowitz, Funk, et al., "Seasonal Patterns," 2005; Funk, Markowitz, et al. 2005). For example, Blackwell and Greene (2002) reported that Cook Inlet beluga whales did not appear to be bothered by the sounds from a passing cargo freight ship. Despite increased shipping traffic and maintenance operations (e.g., dredging) beluga whales continue to utilize waters within and surrounding the POA, interacting with tugs and cargo freight ships (Markowitz and McGuire 2007; NMFS 2008). This is in contrast to observations of beluga whales in the Saint Lawrence, where a 60 percent decline in passage rates of belugas was noted to coincide with an increase in recreational boat traffic (Caron and Sergeant 1988). During annual marine mammal monitoring studies performed at the POA, animals were found in higher densities in the nearshore area (6 km^2 [2.3 miles^2]) around the POA where vessel presence was highest (USDOT Maritime Administration and POA 2009). Noise from increased marine vessel activity during project construction could impact beluga whales through behavioral disturbance and displacement near the Crossing location; however, background sound levels in Knik Arm are already high because of strong currents, eddies, recreational vessel traffic, and commercial and military shipping traffic entering and leaving the POA (e.g., Blackwell and Greene 2002; Blackwell 2005; URS 2007; Scientific Fishery Systems 2009; Širović and Saxon-Kendall 2009). The addition of noise due to construction and operation of the KAC would not be outside the present experience of these whales, although levels may increase locally.

Only 27 percent of the KAC construction vessels will be motorized, and routes to and

from work sites will be monitored by observers. Construction vessels will typically operate in a slow (~2–3 knots), purposeful manner transiting to and from work sites in as direct a route as possible. Marine mammal monitoring observers and passive acoustic devices will alert vessel captains as animals are detected to ensure safe and effective measures are applied to minimize beluga whale impacts.

The proposed monitoring and minimization measures incorporated into the KAC project will keep construction personnel aware of beluga presence in the construction zone, which will further reduce the possibility of a vessel strike.

Non-auditory Physiological Effects

Non-auditory physiological effects or injuries that theoretically might occur in beluga whales exposed to strong underwater sound include stress, neurological effects, bubble formation, resonance effects, and other types of organ or tissue damage. Due to proposed mitigation measures (e.g., mandatory shut downs) beluga whales would not be exposed to sound at or above 180 dB and likely less than that as sound studies indicate the 180/190 dB threshold is approximately 0-20 m from pile driving and NMFS is proposing a 200m shut down zone. Therefore, it is not expected that severe physiological effects from exposure to sound would be expected; however, a hormonal stress response is possible. Romano et al. (2004) demonstrated that belugas exposed to seismic water gun and (or) single pure tones (SPLs up to 201 dB) resembling sonar pings showed increased stress hormone levels of norepinephrine, epinephrine, and dopamine. While RLs would not be as strong as the ones in that study, a stress response would not be unexpected. However, in two studies, exposure of captive beluga whales to playbacks of drilling noise did not result in increased levels of (stress-related hormones) (API 1986; Thomas, Kastelein, and Awbrey 1990). Wright et. al (2007) concluded that anthropogenic noise, either by itself or in combination with other stressors, can reduce the fitness of individual marine mammals and decrease the viability of some marine mammal populations. The available literature suggests stress hormone levels may be affected by noise exposure, but that the results are highly variable and dependent (in part) upon factors such as the duration, frequency, and intensity of sound, the species of marine mammal, the individual's response, and the amount of control the individual has over the stressor. The physiological effects of any elevation in hormone levels are equally variable.

Studies have also demonstrated that reactions of animals to sounds could result in physical injury. It has recently been reported that stranded deep diving marine mammals displayed physical attributes similar to the bends (e.g., in vivo gas bubble formation) (Fernandez et al. 2004, 2005). Marine mammals may experience these symptoms if surfacing rapidly from deep dives in response to loud sounds. However, because Knik Arm is a shallow water estuary, marine mammals found there are not considered deep divers, and due to proposed mitigation measures, non-auditory physiological impacts, other than stress, are not expected.

Several aspects of the planned monitoring and mitigation measures for the KAC are designed to detect beluga whales occurring near pile driving and to avoid the chance of them being exposed to sound levels which could result in injury or mortality. Such

monitoring and mitigation at the nearby Port of Anchorage expansion project has worked well. NMFS does not expect Level A harassment to occur.

Behavioral Effects

Behavioral responses of beluga whales to noise are highly variable and depend on a suite of internal and external factors which in turn results in varying degrees of significance (Southall et al. 2007). Internal factors include: (1) individual hearing sensitivity, activity pattern, and motivational and behavioral state (e.g., feeding, traveling) at the time it receives the stimulus; (2) past exposure of the animal to the noise, which may lead to habituation or sensitization; (3) individual noise tolerance; and (4) demographic factors such as age, sex, and presence of dependent offspring. External factors include: (1) non-acoustic characteristics of the sound source (e.g., if it is moving or stationary); (2) environmental variables (e.g., substrate) which influence sound transmission; and (3) habitat characteristics and location (e.g., open ocean vs. confined area). There are no consistent observed threshold levels at which beluga whales respond to an introduced sound. Beluga whale responses to sound stimuli have been noted to be highly dependent upon behavioral state and motivation to remain or leave an area. Few field studies involving stationary industrial sounds have been conducted on beluga whales. Reactions of belugas in those studies varied. For example, in Awbrey and Stewart (1983) (as summarized in Southall et al. (2007), recordings of noise from SEDCO 708 drilling platform (non-pulse) were projected underwater at a source level of 163 dB. Beluga whales less than 1.5 km from the source usually reacted to onset of the noise by swimming away (Received Levels (RL) approximately 115.4 dB). In two instances groups of whales that were at least 3.5 km from the noise source when playback started continued to approach (RLs approximately 109.8 dB). One group approached within 300 m (RLs approximately 125.8 dB) before all or part turned back. The other group submerged and passed within 15m of the projector (RL approximately 145.3 dB). TTS experiments have also documented behavioral responses by trained belugas. These responses included reluctance to return to experimental stations when exposed to watergun pulse sounds projected 4.5m from the subject at approximately 185.3 dB (171 dB re 1 μ Pa²-s [SEL]) (Finneran et al. 2002) and behavioral changes when exposed to sounds from the explosion simulator at approximately 200 dB (177 dB re 1 μ Pa²-s [SEL]) (Finneran et al. 2000). In a non-pulse exposure experiment (i.e., 1 s tones), belugas displayed altered behavior when exposed to 180-196 dB (180-196 dB re 1 μ Pa²-s [SEL]) (Schlundt et al. 2000).

Masking of whale calls or other sounds potentially relevant to whale vital functions may occur. Southall et al. (2007) defines auditory masking as the partial or complete reduction in the audibility of signals due to the presence of interfering noise with the degree of masking depending on the spectral, temporal, and spatial relationships between signals and masking noise as well as the respective received levels. Masking occurs when the background noise is elevated to a level which reduces an animal's ability to detect relevant sounds. Belugas are known to increase their levels of vocalization as a function of background noise by increasing call repetition and amplitude, shifting to higher frequencies, and changing structure of call content (Lesage et al. 1999; Scheifele

et al. 2005; McIwem 2006). Another adaptive method to combat masking was demonstrated in a beluga whale which reflected its sonar signal off the water surface to ensonify an object on which it was trained to echolocate (Au et al. 1985). Due to the low frequencies of construction noise, intermittent nature of pile driving, and the ability of belugas to adapt vocally to increased background noise, it is anticipated that masking, and therefore interruption of behaviors such as feeding and communication, will be minimized.

Many marine mammals, including beluga whales, perform vital functions (e.g., feeding, resting, traveling, socializing) on a diel (i.e., 24 hr) cycle. Repeated or sustained disruption of these functions is more likely to have a demonstrable impact than a single exposure (Southall et al. 2007). However, it is possible that marine mammals exposed to repetitious construction sounds from the proposed construction activities will become habituated or tolerant after initial exposure to these sounds, as demonstrated by beluga vessel tolerance (Richardson et al. 1995, Blackwell and Green 2002). Habituation is found to be common in marine mammals faced with introduced sounds in their environment. For example, bowhead whales (*Balaena mysticetus*) have continued to use pathways where drilling ships are working (RLs: 131 dB re: 1 μ Pa) so that they can continue their eastward migration (Richardson et al. 1991). In addition, harbor porpoise, dolphins, and seals have become habituated to acoustic harassment deterrent devices such as pingers and seal bombs after repeated exposure (Mate and Harvey 1987; Cox et al. 2001).

Habitat Loss and Diminished Use

The KAC will result in the direct loss and modification of beluga whale habitat. The bridge causeways will fill approximately 90 acres of intertidal and subtidal habitat. The habitat to be filled is used as migrating, rearing, and foraging habitat for fish. However, habitats with the same attributes as the area to be filled exist in many other areas of Knik Arm.

Available data do not describe the specific distribution and movements of beluga whales in these areas. Although much of this area is shallow or exposed during low tides, it is otherwise available to beluga whales and assumed to provide some habitat values. Whales are generally described to move up the east side of Knik Arm on flood tides, and return on ebb tides along the western shore. These are very generalized, however, and we believe beluga whales may be distributed throughout Knik Arm near the crossing.

As the project approaches are constructed, beluga whales continuing to use the habitat will be traversing and feeding in a deeper channel, and will be exposed to construction noise. Beluga whales have continued to use the waters off the Port of Anchorage in which past port operations and ongoing maintenance dredging occurred. This flexibility in dealing with a changing physical habitat may be the result of adaptation to the Cook Inlet environment, which is highly dynamic due to huge tides, silty substrate, and seasonal ice movements.

The effects of the KAC on beluga critical habitat are discussed later in this opinion.

Lighting

Artificial lighting will be used during project construction, including barge and crane lighting, work-area lighting, spot lights, and vehicle lights. The use and duration of these artificial light sources are not yet known. However, the Knik Arm Bridge and Toll Authority who will oversee the design of the crossing expects that most lighting will be directed toward the surfaces of project structures or toward other working surfaces and not directly on Knik Arm waters. As such, the use of lighting during construction is not expected to affect the distribution of beluga prey species at night.

B: Operation

The KAC will introduce noise into the water during operation, the majority of which would come from vehicles on the road surface. Road noise would be transmitted into the water column through the pile supports. The level of noise that may be expected is not known. While operational noise levels in water are projected by DOT to be less than 125 dB (the in-water threshold for behavioral harassment), this noise may be detected by beluga whales and could elicit more subtle reactions – most importantly by any diminished access through the crossing alignment.

Noise generated by traffic on the Crossing may enter the water through an airborne noise pathway and a structure-borne noise pathway. KABATA has estimated operational underwater sound level of approximately 94 dB re 1 μ Pa just below the water's surface. This noise may be detectable by whales, raising concern regarding the continued passage of belugas under the bridge. The BA included an analysis of passage under structures by beluga whales, both within Cook Inlet and elsewhere. That analysis found that beluga whales in Knik Arm generally follow a pattern of movement from the upper arm at high tide to Eagle Bay and the Sixmile Creek area at low tide. Belugas generally remain north of the Crossing corridor during these localized movements; occasionally, however, they transit the narrows between Cairn Point and Port MacKenzie through the Crossing corridor (Markowitz, Funk, et al., "Use of Knik Arm Crossing Corridor" 2005). The approaches and bridge associated with the KAC project will intersect a migratory path used by belugas to gain access to important habitats in mid- and upper Knik Arm.

Within the distribution range of the Cook Inlet beluga whale, no bridges spanning marine waters currently exist. Several bridges, however, span rivers within this range. All of these bridges are within the tidal reaches of rivers. Evidence indicates that Cook Inlet beluga whales are capable of traveling beneath bridges with narrower spans, lower deck heights, and shallower and more constricted water bodies than the KAC bridge (HDR 2010). Examples of Cook Inlet beluga whales passing beneath existing bridges are relevant to understanding how belugas might respond to the Crossing because they indicate that operational noise and other characteristics of these bridges are tolerated by Cook Inlet beluga whales. These provide general evidence that Cook Inlet beluga whales tolerate in-water and over-water structures, and specific evidence that at least some Cook Inlet beluga whales are willing to swim beneath and upriver of bridges.

A review in the BA (HDR 2010) considers incidents and reports of beluga whales moving

under 13 bridges spanning seven rivers in the Cook Inlet watershed:

- **Beluga River** (upriver of the bridge located near river mile [RM] 6) – Native hunters reported Cook Inlet beluga whales ascended the Beluga River as far as Beluga Lake (approximately RM 30) (Huntington 2000). Beluga whales have been observed passing under the bridge on several occasions between 2004 and 2008 to areas at least 1 mile upriver of the bridge at high tide while feeding on fish.
- **Bird Creek** (upriver of the Seward Highway Bridge and Alaska Railroad Bridge) – A satellite-tagged beluga whale was recorded upstream of the bridges in 2000 (Hobbs et al. 2005; NMML unpublished data).
- **Glacier Creek** (upriver of the Seward Highway Bridge and Alaska Railroad Bridge) – A satellite-tagged beluga whale was recorded upstream of the bridges on three occasions in 2000 (Hobbs et al. 2005; NMML unpublished data).
- **Kenai River** (upriver of the Warren Ames Bridge located at river mile [RM] 4 – During interviews conducted in 1999, Native hunters reported that beluga whales traveled up the Kenai River (Huntington 2000). Reports of Cook Inlet beluga whale sightings upriver from the Warren Ames Bridge as far as RM 11 indicate passage of beluga whales underneath the bridge. From the mid-1970s through early 1990s, small groups of belugas (one to four whales) were seen in the river from the mouth to just upriver of the bridge during salmon runs, moving upstream and often pursuing salmon.
- **Knik River** (upriver of the Glenn Highway Bridges [northbound and southbound] and the Alaska Railroad Bridge) – Cook Inlet beluga whales have been seen in the Knik River passing underneath and swimming upriver of the Glenn Highway Bridges, located at approximately RM 0. Beluga whales were also seen upriver of the Alaska Railroad Bridge over the Knik River.
- **Placer River** (upriver of the Seward Highway Bridge and Alaska Railroad Bridge) – Cook Inlet beluga whales have been seen upriver of the bridges across the Placer River (Huntington 2000; various individual sightings).
- **Twentymile River** (upriver of the Seward Highway Bridge and Alaska Railroad Bridge) – Cook Inlet beluga whales, including calves, have been seen passing underneath and swimming upriver of the bridges across the Twentymile River.

In addition to these observations, Cook Inlet beluga whale groups have also been seen adjacent to bridges in Turnagain Arm at the mouth of Indian, Peterson, and Ingram creeks (Hobbs et al. 2005; NMML unpublished data); Portage Creek (Hobbs et al. 2005; NMML unpublished data); and within 1,640 feet of the bridge spanning the Twentymile River (Hobbs et al. 2005; NMML unpublished data; Markowitz et al. 2007).

Beluga whales in populations outside of Cook Inlet have also been observed passing under bridges. In Alaska, records of beluga whale passage beneath four bridges were identified: the Dalton Highway Bridge over the Yukon River (Lowry 1994), the Tanana River and Mears Memorial bridges over the Tanana River (Joling 2006), and the bridge over the Safety Sound Estuary on Nome-Council Road. The following records of belugas passing beneath bridges outside of Alaska were also identified: a lone beluga whale

passed beneath 10 to 14 bridges in the Delaware River in 2004; a single beluga whale passed under two bridges crossing the Saguenay River at Chicoutimi, Canada (NMFS 2005; HDR 2010); and beluga whales were observed passing underneath bridges in the Dvina and Amur rivers in Russia. There are also records of additional sightings of belugas near the bridges at Chicoutimi, Canada, but it is unknown whether they crossed beneath them. In 1940, a beluga whale was seen south of the Tacoma Narrows Bridge (HDR 2010). In total, beluga whale passage upriver of several bridges worldwide has been documented, indicating that beluga whales from at least five stocks tolerate and pass beneath bridges.

Cook Inlet beluga whales are generally found to tolerate the presence of in-water structures in addition to bridges. Belugas in Cook Inlet are known to tolerate rock-armored shorelines, port facilities, and oil and gas production platforms. Because most coastal and offshore development in Alaska has occurred either in Cook Inlet or outside the distribution range of belugas, most Alaskan examples of beluga whale responses to in-water structures are from Cook Inlet. In Knik Arm, belugas are also known to transit developed areas associated with the POA and Port MacKenzie (Markowitz 2005; Prevel-Ramos et al. 2006; Cornick and Saxon Kendall 2008, 2009).

Accounts describe Cook Inlet beluga whales transiting coastal areas adjacent to rock-armored shorelines and using them as foraging areas at the POA, Port MacKenzie, and the Seward Highway along Turnagain Arm are described below (HDR 2010).

- **The POA** – Accounts of opportunistic feeding Cook Inlet beluga whales at the POA include a description of “positioning one whale along a riprap dock, while a second whale herds salmon along the structure toward the stationary beluga whale ...” (NMFS 2008a).
- **Port MacKenzie** – One account of Cook Inlet beluga whales at Port MacKenzie involves “... beluga corralling salmon into a roughly 30-foot-wide by 50-foot-long area between a silt bar and the armor rock downstream from Port MacKenzie ... larger white to grey-colored belugas pushing fish into this area and smaller belugas feeding as the larger belugas appeared to be keeping the fish corralled.”
- **The Seward Highway** – Extensive sections of the northwest Turnagain Arm shoreline have been filled in and armored with rock to widen the Seward Highway (NMFS 2008a). Cook Inlet beluga whales often travel adjacent to the rock armor when transiting these nearshore areas and, in surveys, were most often sighted immediately along the rock-armored shoreline between Bird Point and Girdwood (Markowitz et al. 2007). One-third of groups seen in September and two-thirds of groups seen in October 2006 (the months with the most sightings) were observed within 150 feet of the armored shoreline (Markowitz et al. 2007). Several Cook Inlet beluga whale groups were also seen as they traveled nearshore from Bird Point to Girdwood (McGuire et al. 2008; McGuire and Kaplan 2009). Cook Inlet beluga whales were occasionally observed feeding near rock armoring approximately 500 m (1,640 feet) east of Bird Point, as they traveled eastward and upstream in Turnagain Arm (McGuire et al. 2008).

Beluga whale sightings worldwide indicate that the whales' responses to in-water structures are variable and include avoidance, utilization of structures for prey capture, tolerance, and changes in behavior without avoidance. The variability in responses and the paucity of data make it difficult to draw definitive conclusions about potential response of belugas to in-water structures. However, documented responses of Cook Inlet beluga whales indicate they are tolerant of in-water structures.

Long-term population effects of habitat alteration from bridges—including level of tolerance and speed of habituation—are not fully understood for the Cook Inlet beluga whale population. The response of beluga whales to the KAC project is difficult to accurately predict. Examples from scientific studies and opportunistic sightings suggest that they are tolerant of bridges and will continue to swim through the crossing corridor during project operation. It is possible that some individual whales will, at least initially, not pass through the crossing; however, beluga whales' fidelity to feeding, molting, and calving areas, coupled with the exhibited tolerance of individual belugas to bridges and other in-water structures, indicates that they will likely continue traveling up Knik Arm to gain access to these sites during operation of the project. Furthermore, beluga whales have been observed transiting areas near the crossing corridor despite the presence of in-water structures associated with the POA and Port MacKenzie, implying that no diminished habitat use in or north of the crossing corridor is expected as a result of the presence of the crossing.

The approach embankments associated with the KAC project will narrow the tidal channel and increase the current through the bridge opening by approximately 4 percent (KABATA 2007). This will be most evident during spring flood tides (KABATA 2007). Analysis of actual velocity measurements across Knik Arm showed that 96 percent of the total flow within Knik Arm passes through the 8,200-foot gap that the KAC project will bridge. Belugas are known to move into the upper reaches of Cook Inlet during flood tide and depart these areas during ebb tide (Moore et al. 2000, Funk et al. 2005, Hobbs et al. 2005). They move with the tides once or twice daily in Cook Inlet, allowing access to feeding and nursery areas not accessible at lower tides (Hobbs et al. 2005). Beluga presence and direction of travel in Knik Arm are directly related to tidal stage (Funk et al. 2005). As such, an increase in current through the bridge opening is not expected to affect beluga movement.

Lighting

Bridge illumination will be with low-profile luminaires, approximately 15 to 20 feet above the approach road and bridge deck, installed in a way that will minimize incidental light scatter. Belugas are highly reliant on echolocation for navigation and feeding; any incidental light scatter is not likely to affect these behaviors. The highly turbid waters of Knik Arm will reduce light penetration through the water column, further reducing the likelihood of any impacts.

Indirect Effects of the Action

A: Construction

Construction activities may indirectly affect Cook Inlet beluga whales through impacts to prey species. In general, little is known about how noise impacts fish (Hastings and Popper 2005, DFO 2004). Some research indicates that some noises may evoke flight and avoidance response in juvenile salmon. Other studies have shown that the avoidance response is temporary. Salmon have been found to respond to low frequency sounds, but only at very short ranges (Chamberlin 1991). Carlson (1994), in a review of 40 years of studies concerning the use of underwater sound to deter salmonids from hazardous areas at hydroelectric dams and other facilities, concluded that salmonids were able to respond only to low-frequency sound and react only to sound sources within a few feet from the source. He speculated that the reason that underwater sound had no effect on salmonids at distances greater than a few feet is that they react to water particle motion/acceleration, not sound pressures as such. Detectable particle motion is only produced within very short distances of a sound source, although sound pressure waves travel farther (USDOT 2005). It is also likely that fish will avoid sound sources within ranges that may be harmful (McCauley et al. 2003).

Pollutants

The operation of marine vessels during construction of the KAC project will increase the risk of marine fuel spills from leaks or breaks in vessel fueling equipment, vessel collisions or sinking, mechanical or structural failures, or human errors such as leaving valves open. Use of heavy machinery near or in Knik Arm will also present a risk for a spill of fuel or other hazardous materials. Standard best management practices will be in place to reduce the potential for these accidents to occur.

Should an oil spill occur, the effects on beluga whales are generally unknown. Research has shown that while cetaceans are capable of detecting oil they do not seem to be able to avoid it (Geraci 1990). The potential impacts on beluga whales caught in an oil spill include: skin contact with oil; ingestion of oil; respiratory distress from hydrocarbon vapors; contaminated food sources; and displacement from feeding areas. The actual impacts would depend on the extent and duration of contact, and the characteristics (type and age) of the oil. Cook Inlet beluga whales could be affected by residual oil from a spill even if they were not present during the oil spill, due to the highly mobile nature of the spill and the drastic tidal fluctuations in the area (NMFS 2008).

Polycyclic aromatic hydrocarbons (PAHs), a group of contaminants found in petroleum products, combined with other contaminants, may cause cancer in beluga whales (Kingsley 2002) and are otherwise a concern with respect to the conservation and recovery of the Cook Inlet beluga whale. Cook Inlet belugas appear to be bioaccumulating PAHs from the environment and prey (Reynolds 2010). A spill of petroleum products during project construction might increase the release of PAHs into the environment. PAHs, however, generally do not easily dissolve in water (Agency for Toxic Substances and Disease Registry [ATSDR] 1995). Furthermore, the fast currents and assimilative capacity of Knik Arm would reduce any impacts on water quality that might result in the event of a spill. Because of the physical and chemical properties of PAHs, it is unlikely the project will result in high concentrations of these toxins in Cook Inlet or result in impacts on Cook Inlet beluga whales.

Refueling and other operations involving handling of harmful materials will be under EPA regulations prohibiting water pollution. The vessels will likely be fueled at the POA vessel fueling area, where spill containment measurements will be in place. Impacts to beluga whales resulting from a spill or release of hazardous substances during construction will be unlikely.

Stormwater runoff from ground disturbance in construction areas associated with the road corridor and the bridge approaches may be transported off site by rainfall or snowmelt and may affect water quality in receiving waters. Other potential sources of stormwater pollution will include soils tracked off site by construction traffic, hazardous materials used or stored on site, and disturbance of potentially contaminated soils.

All construction activities related to the KAC must be permitted under the guidelines of the NPDES program until construction is complete. A Construction General Permit issued by EPA under the NPDES program will be required. EPA issues the permit to the developer only after thorough review of the project-specific Stormwater Pollution Prevention Plan (SWPPP) written by the developer. The SWPPP will form the basis of stormwater pollution prevention for the KAC project during all construction phases. The SWPPP will comply with requirements of the Clean Water Act and will include an erosion control plan that details actions to be taken by construction operators to prevent stormwater contamination.

B: Operation

Changes in Availability of Beluga Whale Prey

The operation of the KAC may diminish fish habitat value, with corresponding decreases in prey numbers or availability. Beluga whales are opportunistic feeders known to prey on a wide variety of animals (NMFS 2008). Because beluga whales do not always feed at the streams with the highest runs of fish, water depth and fish density may be more important than sheer numbers of fish in the whales' feeding success (NMFS 2008). Within Knik Arm, certain bottom structure, depths, and proximity to anadromous fish streams seems to be concentrating mechanisms that characterize important feeding sites. The proposed action is not expected to diminish these physical factors that may underlie the feeding efficiency of these whales.

In 1996, the Sustainable Fisheries Act amended the Magnuson-Stevens Fishery Conservation and Management Act to require the description and identification of Essential Fish Habitat in fishery management plans, the identification of adverse impacts on essential fish habitat, and actions to conserve and enhance such habitats. Essential Fish Habitat includes those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NMFS classifies Cook Inlet as Essential Fish Habitat for all five Pacific salmon species. Freshwater Essential Fish Habitat for the salmon fisheries in Alaska includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in the state. Knik Arm is listed as essential fish habitat.

Effects on Critical Habitat

NMFS is required under Section 4(b) (2) of the ESA to designate critical habitat for the Cook Inlet beluga whale. A proposed rule to designate this critical habitat was published in the Federal Register on December 2, 2009 (74FR 63080). The in-water affected area for the proposed action is entirely within the proposed critical habitat. The proposed action has the potential to affect beluga whales through the disturbance or modification of their habitat. This section describes the essential physical and biological features of the proposed beluga whale critical habitat occurring in the action area, the mechanisms of potential direct and indirect effects of the KAC on these features, and the anticipated impact of these mechanisms to the proposed critical habitat. For each essential feature (also known as a Primary Constituent Element or PCE), we consider the baseline condition. We then assess the effect of the KAC on the quality, quantity and availability of each PCE. If there is a reduction of a PCE, then the timing, duration and magnitude of the reduction are estimated. Any mitigative measures are also considered in this evaluation. We then sum the individual effects to the PCEs to consider the project impact to critical habitat. The destruction of critical habitat and its adverse modification are evaluated by the consequences of any changes in the function, amount, or capacity of the PCE's relative to their ability to provide for the ecological needs of a recovered population of this DPS.

PCE 1 - Intertidal and subtidal waters of Cook Inlet with depths <30 feet (9.1 m) (MLLW) and within 5 miles (8.0 km) of high and medium flow accumulation anadromous fish streams

This PCE reflects the importance of shallow intertidal and subtidal areas proximate to tributary waters of Cook Inlet that contain anadromous fish populations that comprise the principle prey of Cook Inlet beluga during the spring, summer, and fall. NMFS tagging data and visual observations by various monitoring and research efforts confirm these areas are preferentially used during ice-free seasons. In addition to feeding habitat, these areas may also be important for calving and predator avoidance. This PCE occurs along the proposed crossing alignment and throughout most of the action area.

Quality

The quality of this essential feature may be altered by the project, as soft mud and sand substrates are replaced by rip rap materials. Depositional sites may have different sediment characteristics than currently exist. The functional effect of such changes to beluga whales is not considered significant because these areas would still provide structure and depths that support foraging behavior. Cook Inlet beluga whales have often been observed to utilize structure in their feeding strategy. While we are unable to identify this as beneficial to feeding behavior, we assign a neutral assessment here to any effect on the quality of this PCE.

Quantity

The bridge approach fills for the KAC would remove approximately 90 acres of intertidal and subtidal habitat. The BA (HDR 2010) estimates this represents 0.03 percent of all such habitat within Knik Arm. We were unable to verify this estimate, but acknowledge the area is small and the removal minimal when compared to the entire intertidal and subtidal acreages that exist within Knik Arm. The loss however is permanent, since the

approaches, rip rap, and fill material are to remain in place through operation. Additionally, the bridge approaches will interrupt long-shore drift patterns and can be expected to result in accretion of sediments on one side, and scouring on the other. The BA determined an additional 260 acres of intertidal and subtidal habitat would be created over time due to deposition. We were unable to validate this estimate, and believe the KAC will diminish the overall quantity of this PCE. Because several sources report that the eastern shoreline of lower Knik Arm is regularly used by beluga whales, and because this is near important beluga habitat areas such as Eagle Bay and Six Mile Creek, any reduction in the extent of habitat loss here would be beneficial. A conservation recommendation is included in this opinion to reduce this loss.

Availability

Knik Arm and Cook Inlet have habitat as defined in PCE #1 in abundance. The crossing approaches and supports include very little valuable intertidal and subtidal habitat that will be removed or altered by the project's construction and operation. The crossing structure would not obstruct access to this PCE anywhere else in Area One or Two critical habitats, nor obstruct the availability of PCE # 1. The KAC is not likely to affect the availability of PCE # 1. We believe the KAC will adversely affect proposed critical habitat because of the loss of this essential feature through filling. However, this loss would be very small and would not appear to have measurable consequence to individual whales nor this DPS.

PCE 2 - Primary prey species consisting of four (4) species of Pacific salmon (Chinook, sockeye, chum, and coho), Pacific eulachon, Pacific cod, walleye pollock, saffron cod, and yellowfin sole.

Cook Inlet beluga whales are highly mobile, opportunistic feeders known to prey on a wide variety of species, particularly seasonally abundant fish such as eulachon and salmon. Fish species occurring in the Arm include chum, coho, Chinook, sockeye, and pink salmon as well as Dolly Varden. In determining the effects of this action on PCE #2, we considered the loss of and alteration to fish habitat, the effects of on-land development induced by the crossing, and the effects of construction noise on these prey species. Permanent loss of 90 acres of intertidal and subtidal shoreline habitat will result from the approach fills. Construction pile driving noise will radiate throughout the water from the noise source until it dissipates to background levels. However, no standard distances from a noise source have been established for prey fish protection, and we are unable to estimate the magnitude of this effect.

Quality

The construction and operation of the KAC are not expected to have any impact on the quality of prey species. These fish are largely anadromous species whose residence time in fresh water may be two years or less, and within Knik Arm is limited to a few days to several weeks. Cod, pollock, and sole would not be expected to occur within the action area. Quality of prey may be considered to include their lipid content, body burdens of toxins or pollutants, and nutritional value to beluga whales. Land development induced by the KAC could result in increased exposure by fish to pollutants, including petroleum products and related PAHs from urban runoff. We were unable to quantify any future

levels for these pollutants or to estimate their impact on the quality of these prey species.

Quantity

Baseline studies to enumerate and identify prey fish species and how they use the habitat were conducted in lower Knik Arm around the Port of Anchorage (Pentec, 2005). These studies concluded fish species abundance and diversity is highly variable throughout the year, with overall juvenile salmon being the most prevalent around the Port. The habitat areas near the crossing alignment are similar to those near the Port, although the KAC area supports more shallow tideflats and cut channels which appear to be important micro-habitat aspects important to beluga feeding strategy.

Construction of the KAC will increase local turbidity levels which limit the ability of fish to visually feed. However, Knik Arm has extreme tides and tidally-generated currents, and high suspended sediment loads ranging into the hundreds of nephelometric turbidity units (NTU) (Pentec, 2005). Pentec concluded that, based upon their earlier work and other studies, that visual feeding by juvenile salmonids was possible in microhabitats within the surface water where short periods of quiescence allowed partial clearing. These small lenses of clearer water could occur along the shorelines as well as in the middle of the Arm. The data collected from south of Fire Island suggested that juvenile salmonids were not favoring shorelines. Therefore, the shoreline intertidal and subtidal areas were not necessarily essential to the survival of the juvenile salmonids.

The POA conducted a live caged fish study in 2008 and 2009 (URS, 2009). During this study, juvenile coho salmon were exposed to sheet pile driving noise (vibratory and impact pile driving) while acoustic measurements were made and extended behavioral observations of exposed fish were followed by necropsies to look for effects. The juvenile salmonids were exposed to pile driving at distances ranging from 0.6 meters to 50 meters from the pile driving hammers. Despite attempts to expose fish to the maximum potential noise at very close range, no acute or delayed mortality of any juvenile coho was observed as a result of the exposure to in-water pile driving (URS, 2009). Behavior in all 16 tests, including the three reference tests were recorded as normal. Slight hemorrhaging was observed in five necropsied fish, including two reference fish. However, this was attributed to handling from the hatchery, field transfers, or from the period from euthanasia to necropsy (URS, 2009). The recent fish study demonstrated that pile driving construction such as that associated with temporary pile placement at the KAC does not kill fish and the potential for noise effects on fish is low. Additionally, the seasonal restrictions on impact pile driving and adoption of alternative driving technology for placement of bridge support piling will reduce this possibility further. Pile driving noise was the primary concern for fish impact, it is reasonable to conclude that operation of the crossing would not kill nor reduce the numbers of fish.

Operationally, the crossing is projected to result in increases in wastewater generation, storm water runoff, and non-point pollution. These increases are expected to be most-pronounced within freshwater systems in the Matanuska-Susitna Borough, the majority of which are anadromous waters supporting several species of Pacific salmon, including

Chinook, pink, chum, and coho. According to the BA (HDR, 2010), potential indirect impacts of the KAC could be long-term and could affect fish populations in a large portion of the Matanuska-Susitna Borough. Such effects were not quantified.

Availability

Cook Inlet beluga whales utilize the Susitna delta area, Chikaloon Bay, and upper Knik Arm as major foraging sites, and move through lower Knik Arm at the crossing in moving between these sites. The KAC Project would not affect these primary foraging locations directly. The KAC area is not a primary feeding location for these whales. Monitoring by marine mammal observers indicates that beluga whales primarily appear to swim or travel past the KAC as they access feeding sites further up Knik Arm. We do not expect the accessibility to prey to be significantly altered by the KAC. Beluga whales foraging and anadromous fish movements at or near the crossing may experience slightly higher water velocities. The expenditure of additional energy due to increased channel currents would not be expected to be significant given 1) the relatively small increases in velocities predicted by KABATA; 2) the fact that salmon move passively with tidal movements rather than against strong tidal currents; and 3) the fact that salmon are adept swimmers capable of ascending high velocity waters such as rapids.

PCE 3 - Waters free of toxins or other agents of a type and amount harmful to Cook Inlet beluga whales.

This essential feature recognizes the importance of water quality to Cook Inlet belugas. As high-level predators, beluga whales may bio-accumulate pollutants, and populations elsewhere, such as in the St. Lawrence, have been found to carry heavy body burdens of certain chemicals. Cook Inlet belugas appear to have lower levels of many contaminants than other populations. However, the Conservation Plan (NMFS, 2008) and the Proposed Rule for critical habitat designation state that contaminants are a concern for the sustained health of Cook Inlet beluga whales. Toxicity and dose-response data are minimal for the majority of emerging chemicals, and the impact of most other contaminants to beluga whales is unknown (NMFS 2008). NMFS is presently unable to identify those pollutant agents and concentrations that are harmful to beluga whales. In a report prepared for NMFS (URS 2010), certain chemicals or substances were identified as being of potential concern to Cook Inlet beluga whales. Those found to have “probable” concern included chlorinated compounds (e.g, DDT,PCB, and Dioxins), metals such as methyl mercury, selenium, and butyltins, polycyclic aromatic hydrocarbons, while many more agents were found to be of possible concern.

Quality

At this time, the level of any toxin or substance that is harmful to beluga whales is unknown. The consequence of this uncertainty is considered minor, however, in view of the expected nature of pollutants associated with construction and operation of the KAC. Upper Cook Inlet has been identified as a Category 3 Water-body by the EPA, or water for which there is insufficient or no data to determine if any designated use is impaired. As such, there are no identified water quality concerns or total maximum daily loads for Cook Inlet (R&M, 2007, 2010). An indirect effect of the action would be increased development within the Matanuska-Susitna Borough. This would be a significant impact,

leading to projected increases in wastewater generation, storm water run-off, and non-point pollution with resultant decreases in water quality. The BA found there would be a 45 percent increase in non-point pollution with the KAC as compared to future conditions without the crossing. The BA was unable to quantify the changes in water quality, but we would expect those effects to be most pronounced within freshwater sources, as the assimilative capacity of upper Cook Inlet and Knik Arm is great, owing largely to the extent of tidal mixing and freshwater input.

Operationally, there is concern for the introduction of hydrocarbon compounds due to fuel spills from accidents as well as roadway runoff. KABATA, using roadway accident data for Alaska and a risk formula from the Transportation Research Board, estimates the odds for a fuel or HAZMAT truck accident at 0.0097 spills per year, or one every 103 years. They also point out these trucks would otherwise be crossing the upper Inlet on the existing Matanuska River and Knik River bridges (memo from L. Frazier (KABATA) to B. Smith (NMFS), October 14, 2010). Some runoff from the crossing would be expected to enter Knik Arm. We were unable to quantify this effect, but expect it to be offset to some degree by reduced traffic (and run off) over the existing bridges crossing Knik Arm.

Quantity

The BA projects the KAC would result in a forty five percent increase in non-point water pollution (without mitigation) compared with levels for the future without this project. Much of this increase would be attributable to greater housing densities and increased extent of impervious surfaces. Whether these increases would extend to waters and habitats occupied by beluga whales, or result in a reduction in waters free of toxins of a type and amount harmful to Cook Inlet beluga whales is unknown.

Availability

The availability of this PCE would essentially be the same as the quantity of waters free of toxins (above).

PCE 4 - Unrestricted passage within or between the critical habitat areas

Although many populations of beluga whales are migratory, the Cook Inlet stock has been shown to remain in Cook Inlet year round (Hobbs et al. 2005), with seasonal distribution patterns closely tied to prey availability. Annual aerial surveys and satellite tagging data from NMFS have established the distribution and abundance of beluga whales in Cook Inlet. During the spring and summer (May – July), Cook Inlet beluga whales are found in the upper Inlet, primarily concentrated in the Susitna River delta area and to a lesser extent in Knik Arm, Turnagain Arm, and Chickaloon Bay, coinciding with strong runs of eulachon and salmon. In the fall (August – October), belugas follow fish runs in Knik Arm and Turnagain Arm. As the fish runs decline in the fall, the beluga whales then disperse offshore throughout the mid Inlet during the winter (December to March) (Hobbs et al., 2005).

Within Knik Arm, Cook Inlet beluga whales move on the flooding tide, feed on salmon, then fall back with the outgoing tide to hold in waters north of the KAC. Whales moving

up Knik Arm tend to prefer the eastern shoreline, while whales moving out of Knik Arm tend to hug the western shoreline (Cornick and Saxon-Kendall 2009).

The discussion throughout this section is based on the analysis of the effects of the action on habitat use by the Cook Inlet beluga whale for movement within proposed critical habitat Area One, where the KAC is located.

Quality

Data associated with monitoring of the Port of Anchorage expansion found a high level of beluga activity within the Port area, even though in-water pile driving and the resulting noise were ongoing. The spatial distribution research over the past five years shows that the Port has not been abandoned by the Cook Inlet beluga whale. KABATA conducted research to determine how the Cook Inlet beluga whale responds to in-water structures (KABATA, 2009). Their report describes how beluga whales navigate around and past in-water structures. The report conclusions included no significant impact to beluga whale behaviors or ability to migrate around in-water structures (see also discussion under Chapter IV, Operation).

Quantity and Availability

For this PCE, we were not able to draw meaningful distinction between quantity and availability. Noise during construction is likely to degrade this PCE, as whales will detect higher in-water noise levels and react by avoiding the sound source or, possibly, abandoning their effort to navigate through and beyond the crossing alignment. This impact has been discussed in Chapter IV, Construction, Noise. While some whales may experience restrictions to passage between habitats due to construction activities, we do not believe that effect would appreciably reduce the value of critical habitat for the conservation of these whales. This is because: 1) the effect would be temporary over the construction period and not expected to persist during operation; 2) only a few whales are expected to react strongly to construction noise by abandoning this habitat; 3) any whales so-affected would have alternative habitat sites available to them; 4) belugas currently remain within upper Knik Arm for some time (e.g. days) before moving to other habitat areas, meaning some restriction in passage may not be outside of their normal experience; and 5) the scheduling of impact and vibratory pile driving to between December 1 and July 31 would avoid the periods of highest use of Knik Arm by Cook Inlet beluga whales.

Unrestricted passage is not likely to be permanently reduced by the action due to channel constriction caused by the approach fills and in-water supports, and increased mid-channel velocities that may impair movement by whales through the alignment. This is because the velocity increases are small, and the whales' movements are often with rather than against the tidal action in Knik Arm. Additionally, the tidal velocities predicted with the project would not be dissimilar to those experienced in other areas of upper Cook Inlet, notably Turnagain Arm and lower Knik Arm.

PCE # 5 - Waters with in-water noise below levels resulting in the abandonment of critical habitat areas by Cook Inlet beluga whales.

In Cook Inlet, beluga whales must compete acoustically with natural and anthropogenic

sounds. Human-induced noises within the action area include large and small vessels, aircraft, pile driving, shore based activities, dredging, filling, and other events. Much of upper Cook Inlet is characterized by its shallow depth, sand/mud bottoms, and high background noise from currents and glacial silt (Blackwell and Greene 2002), thereby making it a poor acoustic environment. Despite this, Cook Inlet is a noisy environment due to both natural processes such as winds and tidal movements as well as anthropogenic causes. Recent acoustic studies have determined that background noise in lower Knik Arm (with a high level of contribution by wind and tides) exceeds 120 decibels (dB). Construction of the KAC will increase in-water noise levels due to ship and tug noise, pile driving, and general construction activity.

Quality

The KAC will increase in-water noise levels within Knik Arm and portions of upper Cook Inlet. This effect is likely the most important aspect of this project with respect to the conservation of Cook Inlet beluga whales. The quality of habitat will be affected due to noise from the planned construction activities, primarily pile driving, which will continue intermittently over a 5-6 year period. Operationally, traffic noise from the bridge may be detectable to beluga whales, but any such effect would be very localized and should not significantly detract from the quality of this feature.

Quantity and Availability

For this PCE, we were not able to draw meaningful distinction between quantity and availability. In-water pile driving using vibratory and impact hammering would occur from December through July, with significant periods of no activity during winter.

Monitoring data from the nearby POA expansion project do not indicate abandonment. Beluga whale have continued to use lower Knik Arm. Unusual behavioral changes were not observed during pile driving (ICRC 2009, 2010). Additionally, onshore observations identified no unusual responses and subsurface responses, such as changed vocalizations, were not detectable (Cornick and Saxon Kendall 2009; Kendall et al. 2009; Cornick et al. 2010). Sightings of belugas within and adjacent to areas where pile-driving and other construction activities took place at the POA indicate belugas that entered Knik Arm did not avoid the area. Anthropogenic noise is common in Knik Arm, and beluga whales may have habituated to these sound disturbances (Markowitz, Funk et al. "Use of Knik Arm" 2005).

V. CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR §402.02 as: "...those effects of future State or private activities not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation." Cumulative effects are defined differently under the ESA than they are under NEPA (USFWS and NMFS 1998).

Reasonably foreseeable future Federal actions and potential future Federal actions that are unrelated to the proposed action are not considered in the analysis of cumulative effects because they would require separate consultation pursuant to section 7 of the

ESA. Most structures and major activities within the range of the Cook Inlet beluga whale require Federal authorizations from one or more agencies, such as the Army Corps of Engineers (Corps), Environmental Protection Agency (EPA), and Minerals Management Service. Such projects require consultation under the ESA on their effects to the Cook Inlet beluga whale, and are therefore not addressed here as cumulative impacts.

Port MacKenzie

Port MacKenzie is the center of transportation and development plans for the west side of lower Knik Arm. It currently consists of a 500 foot bulkhead barge dock, a 1,200 foot deep-draft dock with a conveyor system, a landing ramp, and 8,000 acres of adjacent uplands available for commercial or industrial development. The Matanuska-Susitna Borough plans to provide services for bulk commodity storage and a floatplane base to serve Anchorage air taxi and private pilots. The Port MacKenzie project includes plans for the Knik Arm Crossing Bridge, a Cook Inlet ferry service, and an ARRC rail extension.

New developments at Port MacKenzie will add to the disturbance of Cook Inlet beluga whales. Noise levels will increase from construction activities. The build-up of infrastructure at Port MacKenzie will lead to greater vessel traffic on the west side of Knik Arm, with the associated increase in noise and risk of ship strikes and hazardous material releases. Usage to date of Port MacKenzie has been very low and levels of increased activity and the timeframe of any increase are uncertain.

Vessel Traffic

Small vessel activity and the use of a ferry near the mouth of Ship Creek can increase noise disturbance and the risk of ship strikes to beluga whales. The improvements made at the Ship Creek harbor may increase its use by small boats. Noise levels will increase during construction of the ferry terminal and as habitat improvements are being made. Any habitat improvements to the Ship Creek watershed will help to reduce the amount of pollution from runoff entering the Knik Arm, which will help to improve beluga whale habitat. No boat access or launches will be allowed from the KAC, and vessel traffic is not expected to increase with operation of the crossing.

Tourism/Whale Watching

There currently are no boat-based commercial whale-watching companies in upper Cook Inlet. The popularity of whale watching and the close proximity of beluga whales to Anchorage make it possible that such operations may exist in the near future. However, it is unlikely this industry will reach the levels of intensity seen elsewhere because of upper Cook Inlet's climate and navigation hazards (e.g., shallow waters, extreme tides, and currents).

Vessel-based whale-watching may cause additional stresses to the beluga population through increased noise and intrusion into beluga habitat not ordinarily accessed by boats. Avoidance reactions have often been observed in beluga whales when approached by watercraft, particularly small, fast-moving craft that are able to maneuver quickly and

unpredictably; larger vessels which do not alter course or motor speed around these whales seem to cause little, if any, reaction (NMFS 2008). The small size and low profile of beluga whales, and the poor visibility within the Cook Inlet waters, may increase the temptation for whale watchers to approach the beluga whales more closely than usually permitted for marine mammals. General marine mammal viewing guidelines would be adopted, and possibly enhanced, for any commercial beluga whale watching tours.

Pollution

There are many non-point sources of pollution within the action area; such pollution is not federally-regulated. Pollutants can pass from streets, construction and industrial areas, and airports into Ship Creek, Chester Creek, and Fish Creek and then into beluga whale habitat within the action area. The potential for pollution from all sources will increase with population growth, more development, and new commercial activities in upper Cook Inlet.

Hazardous materials can potentially be released from vessels, aircraft, the POA, Port MacKenzie, and EAFB. There is a possibility an oil spill could occur from vessels traveling within the action area, or that oil will migrate into the action area from a nearby spill.

There have been several past State oil and gas lease sales in the Inlet. Future sales are anticipated annually, including much of the submerged lands of Cook Inlet. While these sales are State matters, many or most of the subsequent actions that might impact beluga whales are likely to have some federal nexus. Location of drilling structures would require authorization from the Corps. Discharges such as muds and cuttings or produced waters require permitting through the EPA. Oil spills would be one example of an unauthorized activity. In the event an oil spill occurred on State leases in Cook Inlet, the effects on beluga whales are generally unknown; however, some generalizations can be made regarding impacts of oil on individual whales based on present knowledge.

VI. SYNTHESIS AND INTEGRATION

Pursuant to Section 7(a)(2) of the ESA, Federal agencies are directed to ensure that their activities are not likely to jeopardize the continued existence of any listed endangered and threatened species or result in the destruction or adverse modification of designated critical habitat. "Jeopardize the continued existence of" is defined in regulations as to engage in any action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.

In this section, we assess the effects of the KAC and integrate those effects with the environmental baseline and cumulative effects. Finally, we consider the implication of those effects on the continued existence of the species and the destruction or adverse modification of proposed critical habitat.

In particular, we examine the scientific data available to determine if an individual's probable responses to the agency action's effects are likely to have consequences for the

individual's growth, survival, annual reproductive success, and lifetime reproductive success. When individual animals exposed to an action's effects are expected to experience reductions in fitness, we would expect reductions in the abundance, reproduction rates, or growth rates (or increase the variance in these measures) of the population those individuals represent. On the other hand, when animals are not expected to experience reductions in fitness, we would not expect the action to have adverse consequences on the viability of the populations.

In determining whether individual Cook Inlet beluga whales would be affected, it is necessary to analyze when, where, and how an animal would be exposed to the various activities associated with construction and operation of the crossing. During the analysis, several assumptions were made about their habitats, hearing abilities, and behaviors to reach the conclusions. The ESA does not require scientific certainty. In this opinion, NMFS has utilized the best available scientific data to evaluate the consequences of the proposed crossing on the endangered Cook Inlet beluga. Despite this fact, there exist numerous data deficiencies and uncertainties that limit our ability to accurately forecast the future with the existence of this crossing. These include biological, ecological, political, social, and economic uncertainties. When we encounter uncertainty, we have attempted to assign significance to it with respect to our analysis of impacts and its possible consequence in our determinations.

In considering uncertainty here, we are cautious not to draw upon speculation and unsupported assumptions, but rather consider uncertainty as an adjunct to a decision making process built on scientific knowns. For example, the proposed crossing is likely to result in the taking of Cook Inlet belugas by noise harassment. NMFS scientists have developed population viability models and extinction risk analyses that describe the impacts of mortalities within this DPS to their survival and recovery. Those models, however, do not include a conversion factor by which harassment takes can be assessed; how many harassments would equate to a mortality event? While science has not produced an answer to this question (uncertainty), a reasonable impact assessment can still be arrived at by considering the status of the population, current growth trends, the reactions of whales to harassment, the consequence of that reaction to individuals, and the impact of those individual reactions to the population, along with the uncertainty of the relationship between harassments and mortalities. Were we to find little likelihood of a relationship between harassment and mortality, for example, the overall impact to this DPS might be low or moderate. But by including a finding of a high likelihood that harassments are linked with some mortality, the overall impact may become very significant.

Uncertainty is also considered as we manage risk. We know the Cook Inlet beluga DPS exists at a highly precarious state; having a twenty-six percent probability of extinction within 100 years. The consequence of uncertainty to our ability to recover these whales is great. To avoid Type II errors, (i.e., concluding that the animal was not affected when in fact it was) in situations with many unknowns or uncertainties, we may assume an effect would occur, thereby providing the "benefit of the doubt" to the species. The acceptability of risk is clearly dependent on the status of the species/habitat in question,

and extremely low for populations such as the Cook Inlet beluga. The Cook Inlet beluga whale exists as a small and distinct population that is both physically and genetically isolated from other beluga whale stocks. The population may have numbered more than 1,300 prior to unsustainable levels of removals by subsistence hunting over several decades. The population is now estimated at 340 (2010) whales and has been designated as endangered under the ESA. Our best population model places the risk of extinction at 26 percent within the next 100 years. The additional annual loss of even a single whale would add significantly to this probability (NMFS 2008). The Cook Inlet DPS now may exist within the “collapsed” or “small population dynamics” phase of a population (Figure 7). Here, certain biological factors and stochastic (random) events are expected to have disproportionately larger impacts on the population. Beluga whales have a low calving rate, birthing a single calf every two to three years. Cook Inlet beluga whales have a small range and appear confined to this inlet. Because these whales occupy the most populated and developed region in the state, they must compete with various anthropogenic stressors, including habitat development, pollution, and harassment. These whales often occur in dense aggregations within small nearshore areas, where they are predisposed to adverse effects such as oil spills, poaching, pollution, ship strikes, and disease outbreaks. Live strandings are not uncommon for Cook Inlet beluga whales, and have resulted in deaths. Killer whales foray into the upper Inlet to feed on beluga whales, and this predation is an example of the disproportionate impact associated with the “small population dynamics” phase. Should a killer whale pod take ten whales annually, a population with 1,000 or more animals could easily sustain that level of removal. However, with a population of 340 Cook Inlet beluga whales, this predation rate would represent a large portion of that year’s recruitment (growth) rate. The longer a population exists within the “small population dynamics” zone, the higher the extinction risk. Unfortunately, the Cook Inlet beluga may exist at this zone for some time because of its: 1) low abundance, 2) low growth potential, and 3) lack of observed recovery, despite restriction on subsistence harvest, believed to be the principle stressor to the population. Throughout this critical zone, NMFS believes extraordinary caution is warranted for any actions that may impair the performance of individuals within this DPS.

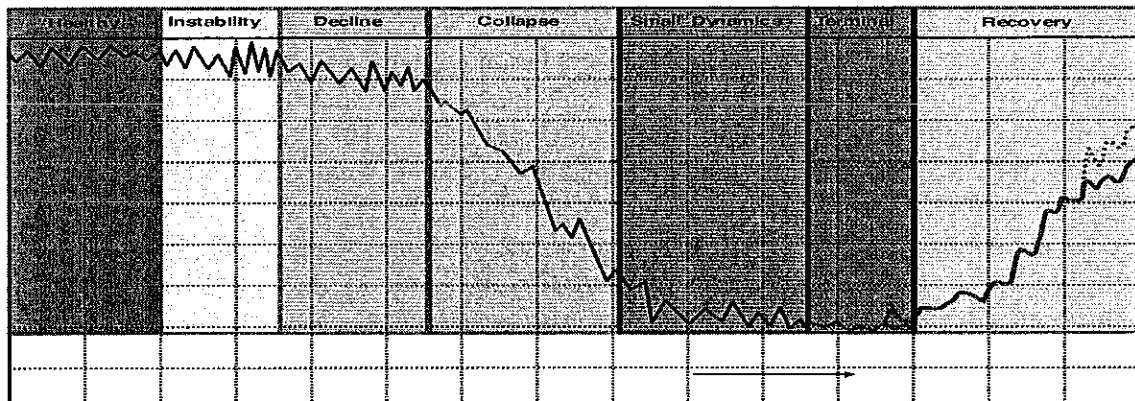


Figure 7. Population trajectory phases

Synthesis

The primary concern associated with the impacts of the proposed action on the Cook Inlet beluga whale has to do with potential impacts due to noise. Exposure to anthropogenic noise may affect these whales by impacting their hearing (temporary threshold shifts or permanent threshold shifts indicating mechanical damage to the ear structure), by masking whale communications, or affecting their behavior (harassment). Therefore, the subject of noise receives much attention in our analysis. There is still uncertainty about the potential impacts of sound on marine mammals, on the factors that determine response and effects, and on the long-term cumulative consequences of increasing noise in the world's oceans from multiple sources (e.g., NRC 2003, 2005). Beluga whales are classified as mid-frequency sensitive, and have hearing sensitivities between 40 Hz and 150 KHz.

Ketten (1998) reported that hearing loss can be caused by exposure to sound that exceeds an ear's tolerance (i.e., exhaustion or overextension of one or more ear components). Hearing loss could result in an inability to communicate effectively with other members of its species, detect approaching predators or vessels, or echolocate (in the case of the toothed whales). Some studies have shown that following exposure to a sufficiently intense sound, marine mammals may exhibit an increased hearing threshold, a threshold shift, after the sound has ceased (for example, Nachtigall et al. 2004; Kastak et al. 1999; Schlundt et al. 2000; Finneran et al. 2002). Thus, a threshold shift indicates that the sound exposure resulted in hearing loss causing decreased sensitivity. This type of hearing loss is called a temporary threshold shift if the individual recovers its pre-exposure sensitivity of hearing over time, or a permanent threshold shift if it does not.

Whether or not a temporary or permanent threshold shift occurs will be determined primarily based on the extent of inner ear damage the received sound and the received sound level causes. In general, whether a given species will tend to be damaged by a given sound depends on the frequency sensitivity of the species. Permanent threshold shifts are less species dependent and more dependent on the length of time the peak

pressure lasts and the signal rise time. Usually if exposure time is short, hearing sensitivity is recoverable. Noise can also cause modification of an animal's behavior (for example, approach or avoidance behavior, or startle).

When noise interferes with sounds used by the marine mammals (for example, interferes with their communication or echolocation), it is said to "mask" the sound (for example, a call to another whale might be masked by an icebreaker operating at a certain distance away). Noises can cause the masking of sounds that marine mammals need to hear to function (Erbe et al. 1999). In a given environment, the impact of a noise on cetacean detection of signals likely would be influenced by both the frequency and the temporal characteristics of the noise, its signal-to-noise ratio, and by the same characteristics of other sounds occurring in the same vicinity (for example, a sound could be intermittent but contribute to masking if many intermittent noises were occurring). It is not known whether (or which) marine mammals can (Erbe and Farmer 1998) and do adapt their vocalizations to background noise.

Available evidence also indicates that behavioral reaction to sound, even within a species, may depend on the listener's sex and reproductive status, possibly age and/or accumulated hearing damage, type of activity engaged in at the time or, in some cases, on group size. For example, reaction to sound may vary depending on whether females have calves accompanying them, whether individuals are feeding or migrating. Response may be influenced by whether, how often, and in what context, the individual animal has heard the sound before. All of this specificity greatly complicates our ability, in a given situation, to predict the behavioral response of a species, or on classes of individuals within a species, to a given sound. Because of this, we attempt to take a conservative approach in our analyses and base conclusions about potential impacts on potential effects on the most sensitive members of a population.

For some beluga whales that respond behaviorally or physiologically to the sounds associated with the crossing, the response could rise to the level of harassment such that an animal is "taken." The ESA does not define harassment. However, in this opinion, we define harassment as an act which creates the likelihood of injury to an individual animal by disrupting one or more behavioral patterns that are essential to an individual animal's life history or to the animal's contribution to a population, or both. This does not mean that a beluga whale that is harassed would be prevented from an essential activity. It is meant to differentiate reactions with possible biological significance from other reactions without consequence; such as slight changes in direction or a slowing of swim speed. In Cook Inlet, it is difficult to observe harassment of an animal because beluga whales dive or stay submerged. It is not known in most instances if behavioral patterns would be disrupted, if the animal is not able to complete some reproduction-related, feeding, or other activity, or if the animal is likely to be injured. Some information on whether an animal would be disrupted by certain environmental factors is available through published studies and observations. At times, information on closely related species was applied to the Cook Inlet beluga whale in this opinion.

Tertiary effects, those resulting in population-level changes including increased mortality, reduced reproductive rate, or habitat abandonment, are also not well understood. A metric for the impacts of noise exposure on critical biological parameters such as growth, survival and reproduction is needed. Unfortunately, as Wartzok et al. (2004) points out, no such metric is currently available. It is likely to take decades of research to provide the analytical framework and empirical results needed to create such a metric, if one in fact is ultimately even viable (Southall et al. 2007).

While NMFS has yet to promulgate regulations or issue guidance positing specific numerical dB thresholds under the MMPA or ESA, NMFS has been in the practice of using 160 dB re 1 μ Pa for impulsive sound and 125 dB re 1 μ Pa for continuous sound as proxies for “take” in Cook Inlet. This step function approach was a compromise intended to afford reasonable protection to a large suite of marine mammals, and may not present accurate thresholds for beluga whales. There is research to suggest that the harassment levels currently accepted by NMFS might be significantly below the levels of noise that actually harass or injure beluga whales (Southall et al. 2007). Also, an acoustic source may have radically different effects depending on operational and environmental variables, and on the physiological, sensory, and psychological characteristics of exposed animals. In many cases, specific acoustic features of the sound and contextual variables (e.g., proximity, subject experience and motivation, duration, or recurrence of exposure) may be of considerably greater relevance to the behavioral response than simple acoustic variables such as the received sound level. These factors make it difficult or impossible to justify basing broad, objective determinations of impact thresholds on received levels alone (Southall et al. 2007).

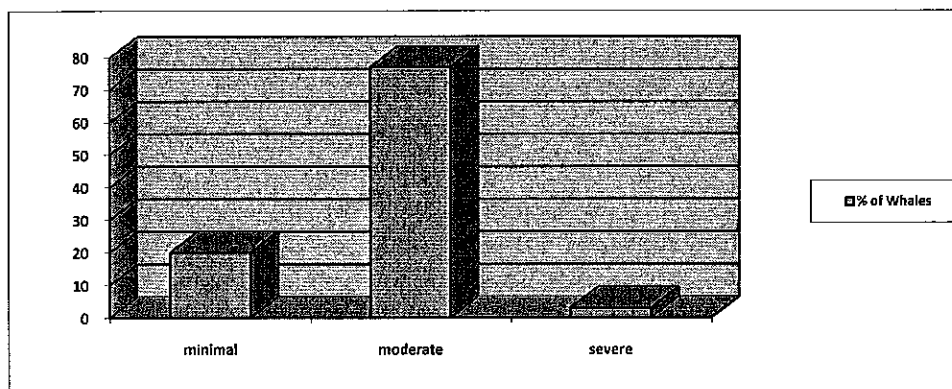


Figure 8. Behavioral Reaction of Cook Inlet Beluga Whales to Noise

Therefore it is likely the reactions of Cook Inlet belugas to in-water noise do not tightly follow the 120/160/180 dB step function NMFS currently recognizes, as the thresholds for harassment takes by continuous noise, harassment take by impulsive noise, and injurious takes, respectively. Rather, a few whales exposed to moderate to high noise levels (e.g. 120-180dB) will show little or no reaction (Figure 8). The majority will experience some level of reaction that might include behavioral changes without biological significance or more significant reactions that could cause whales to avoid the sound source, change surfacing behavior, or alter their vocalizations. Finally, a few whales could have acute reactions to these sounds. We would describe acute reactions as those presenting higher biological significance to individuals than a “take”, and might include injury through PTS or abandonment of important habitats (such as feeding, rearing, or predator-avoidance habitat) with consequence to their well being.

Underwater sound levels in the Cook Inlet are comprised of multiple sources, including physical noise, biological noise, and man-made noise. Physical noise includes wind, waves at the surface, currents, earthquakes, ice, and atmospheric noise. Biological noise includes sounds produced by marine mammals, fish, and invertebrates. Man-made noise consists of vessels (small and large), oil and gas operations, maintenance dredging, aircraft overflights, and construction noise.

Blackwell and Greene (2002) reported ambient levels, devoid of industrial sounds, at Birchwood in Knik Arm (north of the crossing alignment) at approximately 95 dB, to more than 120 dB for locations in lower Knik Arm near the Port of Anchorage. At the mouth of Eagle River, they reported ambient levels at approximately 107.2 dB re 1 μ Pa. Blackwell (2005) reported background levels, not devoid of industrial sounds, without strong currents at 115 to 118 dB. Background levels with strong currents were measured between 125 and 132 dB. URS Corporation (2007) reported ambient levels at 105 to 120 dB when no industrial sounds were identified to background levels between 120 and 140 dB when other vessels were operating. Scientific Fishery Systems, Inc. (2009) indicated background levels ranged from 120 to 155 dB, depending heavily on wind speed and tide level. All of these studies indicate measured background levels are rarely below 125 dB, except in conditions with no wind and slack tide. This means that in-water continuous noise levels at which NMFS determines whales to be “taken” by harassment are commonly exceeded by ambient conditions in Knik Arm, the whales obviously having adjusted to such levels.

This Biological Opinion has considered the effects of construction and operation of the Knik Arm Crossing on endangered Cook Inlet beluga whales. These actions are likely to adversely affect these whales due to vessel operations, noise from piledriving and other construction equipment, and from operational noise, including traffic on the elevated crossing structure. Elevated noise levels in the marine environment could alter the hearing ability of whales, causing temporary or permanent threshold shifts. However, we would not expect whales to remain within ensonified areas long enough to cause such effects, and information suggests most continuous and impulsive underwater noise levels would be at levels or durations below those expected to injure hearing mechanisms. Similarly, increased levels of in-water noise may mask communication between beluga

whales. Erbe (2000) predicted low speed vessels could mask the sounds of killer whales at a range of 1km. Any such effect would be partially mitigated by the difference in frequencies between much of the construction noise and beluga calls. Beluga whales have been found to adjust their echolocation clicks to higher frequencies in the presence of background noise (Au et al. 1985). Nonetheless, construction activities present concerns with respect to hearing, and should be closely conditioned and monitored to avoid these effects.

The DOT estimates the (maximum) total take of Cook Inlet beluga whales during construction to be 30 per year, or 150 over a five year construction period. The majority of these takes are likely to be by harassment due to acoustic exposure to construction noise. However, these estimates concern “takes” as defined by the Marine Mammal Protection Act, and are not necessarily indicative of all direct and indirect effects to beluga whales or their habitat. Cook Inlet beluga whales could be exposed to construction noise exceeding 180 dB. These levels are believed to be capable of damaging hearing in whales by creating permanent threshold shifts. The numbers of whales expected to be so-exposed is very small, and should be mitigated to a large extent by timing certain activities to avoid high-use periods of August through November and operational monitoring to stop activities when whales are within or about to enter the specified safety zones. Similar monitoring of pile driving at the Port of Anchorage has been effective in preventing whales from entering these injury zones. No lethal takes are expected. These estimates for harassment takes (30/yr) were derived through density estimates from various sources that may not reflect the actual numbers of whales in these particular areas, sound propagation figures which are derived from models that may differ from actual conditions, and an assumed “take” received sound level of 160 dB or 120 dB (for intermittent and continuous noise, respectively), which may be higher or lower than the actual levels that elicit biologically-significant response from the whales. However, the estimates appear reasonable in view of reported data for other projects in Cook Inlet.

As discussed earlier, there is concern that received levels below these thresholds are detectable by whales and may cause some behavioral reaction. The numbers of animals so-effected cannot be determined or estimated, depending on many factors including the specific sound propagation characteristics of the area and the numbers, location, age and sex of the receiving whales. There is concern for whales abandoning feeding areas when exposed to construction noise, or that the noise from the crossing may inhibit whales from passing through the alignment in order to access important habitat areas. As has been noted in several papers, the reaction of beluga whales to sound stimuli is more closely related to context (i.e., the recent experience of the whale with the sound stimulus, their current activity, and their motivation to remain or leave) than received sound levels (Wartzok et al. 2004, Southall et al. 2007). Feeding appears to be one of if not the most important habitat attribute for Knik Arm, and feeding whales are often more tolerant to noise and disturbance. Experience elsewhere in Cook Inlet supporting this finding has been described in this opinion; notably the continued occupation of the Sustina River delta by feeding whales despite being actively pursued and hunted during past subsistence harvests.

The operational impacts of the KAC are not considered to present significant direct or indirect consequences to CIB or their critical habitat, nor to significantly contribute to the existing baseline and to cumulative impacts. Spills from the crossing may occur, but would be at very low probabilities. Runoff would present a chronic source of pollution into Knik Arm, but at modest levels. Some of the runoff associated with the crossing would be generated without the project, and higher up within the Knik Arm system, as that traffic would continue to use existing bridges. Lighting of the structure may be detectable to whales, but its impact is unknown. We have few data to predict the levels of in-water noise from the crossing during operation. Noise from the structure is likely to pass into the water column, but given the source levels (road noise), should not generate noise capable of or expected to result in the injury or harassment of whales. The structure is likely to be detectable by whales, given their acute hearing and echolocation abilities, but this would not necessarily elicit a biologically-meaningful reaction by individual whales nor to the population. The effects of operational noise on beluga behavior are discussed further below.

A significant issue with regard to the crossing project's effect on beluga whales concerns their behavior when confronted with physical and acoustic disturbance during construction. Numerous studies of large mammals (Frid and Dill 2002) document the detrimental effects of human-caused disturbance on behavior, reproductive success, and parental investment. Even non-lethal anthropogenic disturbance may evoke reactions similar to those associated with the appearance of a predator. High levels of predation risk (or human disturbance) may indirectly effect survival and reproduction by causing prey (in this case, beluga whales) to divert a large proportion of time and energy away from resource acquisition, so that body condition deteriorates and survival and reproductive success are reduced (Frid and Dill 2002). Often, intense disturbance will cause animals to shift habitats, even at the cost of reduced access to resources, or to remain in preferred habitats if alternative sites are not available or of such quality that the net benefit of remaining exceeds that of adopting alternative habitats. We considered this effect in our evaluation. Such a theory is consistent with the lack of recovery by this population despite the fact that hunting has not been a significant factor since 2005. The reasons for this lack of observed recovery are unknown, but may also include predation by killer whales, strandings, habitat loss, or pollution. Also, the area most-affected by noise from the KAC would not include primary feeding habitats, but rather passage and resting habitats (albeit with some feeding behavior occurring). Any diminished use of this area may not, then, result in significant effects to individual fitness. We also note that the observations from the Port of Anchorage monitoring and TEK indicate Cook Inlet beluga whales will continue to utilize important habitats despite the presence of disturbing stimuli. Beluga hunters report that the whales do not leave the feeding areas off the Susitna River during spring even as the hunt progresses.

An uncertainty in this analysis concerns whether beluga whales' continued passage through the alignment would be impaired, diminished, or prevented during construction or operation. Observations of beluga whales passing under and next to pile supported structures and bridges have been presented earlier in this opinion (see also Appendix F of the BA). We were unable to find any published accounts of beluga whales' reaction to

overhead structure, and few reports of reaction to noise in general. There are anecdotal accounts of cetaceans reacting to bridges, and several well-documented accounts of baleen whales entering coastal tributaries in California. Efforts to drive humpback whales out of the Sacramento River were complicated by the whale's reluctance to pass under a bridge. In October 1997, nineteen killer whales entered Dye's Inlet near Bremerton, Washington and remained in these waters for a month. Responders there reported the whales were seen to be reluctant to pass under the Warren Avenue Bridge, although they eventually did so. There is considerable uncertainty regarding the reaction by whales to the bridge; specifically if whale movement through the site would be impaired or diminished. The significance of this uncertainty is important to our assessment. We consider the probability that most whales would not pass through the construction site, or under the operational bridge, to be low. However, the consequence of these whales failing to pass here could be very great, particularly if this exclusion or diminished use deprives them of important habitat areas that provide for vital life history functions, such as feeding or calving; and if alternative habitat sites cannot be utilized.

Construction noise will be significant, but largely mitigated by the construction plan that would limit the most significant sources of in-water noise, impact and vibratory pile driving, to the period December 1 to July 31, avoiding the time most beluga whales are occupying Knik Arm. Construction effects due to noise are not anticipated or projected to reach levels capable of harassment within important whale habitat farther up Knik Arm, beginning at Eagle Bay. The KAC alignment is as far south as possible while avoiding a deep canyon off Cairn Point. With this site selection, the crossing is proximate to the Port of Anchorage, Port McKenzie, the Anchorage waterfront, and the take off and approaches to JBER and the Anchorage Merrill Field airport. This acts to keep the crossing structure and its operational and construction noise footprints within an area of Knik Arm already subject to anthropogenic noise. Importantly, beluga whales presently continue to occupy and pass through this heavily-ensounded portion of Knik Arm.

Impacts of construction would be further mitigated by the employment of oscillation technology for placement of the main pile support system for the bridge. This procedure avoids the high in-water noise levels associated with impact hammering and vibratory means of pile placement and should have much less potential to harm or harass beluga whales.

In general, scientific literature describes the following reactions by beluga whales as most common with exposure to anthropogenic noise: altered headings, fast swimming, changes in dive, surfacing, respiration, feeding patterns, and changes in vocalizations. Death and injury are recorded but very rare, and associated with much higher source levels than presented by the proposed project. Though behavioral reactions are possible, monitoring reports of construction at the nearby Port of Anchorage show no apparent observable reaction of Cook Inlet beluga whales to construction noises and suggest that construction activities are not influencing beluga whale abundance or habitat use around the Port of Anchorage (USDOT 2009). There could be a number of reasons for this, including, but not limited to: 1) Cook Inlet beluga whales have demonstrated a tolerance

or adaptation to commercial vessel traffic and industrialization around the Port, or may be habituated to such noise; 2) Cook Inlet is a naturally noisy environment which raises ambient sound levels; 3) beluga responses to construction and dredging are not detectable by existing data collection methods; and 4) the need to meet certain life history requirements, such as acquiring food, overrides avoidance reactions. Research on the effects of ship noise on southern resident killer whales in the San Juan Islands (Bain et al. 2006) found whales spent more time travelling and less time foraging in the presence of boats within 400 meters. These killer whales also travelled in less direct paths and had longer average durations between breaths when vessels were present compared to when absent within 1000 meters. They found no significant difference in swim course or speed due to vessel traffic. This study concerned whale watching vessels that were approaching the killer whales at various distances. The results may not be applicable to the KAC, both due to the different species involved and the fact that construction vessels associated with the bridge should not move in relation to whales, other than to avoid them.

Opportunistic sighting reports and those from marine mammal observations describe accounts of beluga whales vocalizing around tugs and barges, swimming near and around ships, and feeding around working vessels and newly filled land. While beluga whales will be exposed to greater background noise during construction, background sound levels in Knik Arm are already higher than many marine and estuarine systems due to strong currents and eddies, wind, recreational vessel traffic, commercial shipping traffic entering and leaving the Port of Anchorage, and military, private, and commercial aircraft operating in the immediate vicinity. It appears unlikely that belugas would alter their behavior in a way that prevents them from entering and/or transiting through the crossing. This conclusion is supported by the fact that construction, particularly dredging, has been an annual event at the Port of Anchorage for decades, during which time beluga whales have been consistently seen in these waters. Beluga whales are routinely observed within the footprint of the POA expansion project, often in areas closest to the port, within 0.5 km of shore (Cornick and Kendall 2008). As mentioned earlier, it is possible and may be likely that a percentage of those whales occupying Knik Arm would react more strongly than others to construction noise and activity. We would expect this number to be small. Given that the highest numbers of whales found in Knik Arm at any one time is on the order of 100, possibly less than 10 of these may show strong avoidance reaction, and some may abandon the habitat altogether during construction.

Our assessment of possible behavioral reactions to the crossing also considered site fidelity by beluga whales. As previously stated, beluga whales in Cook Inlet appear to exhibit some fidelity to several upper-Inlet sites during the ice-free months, but few data presently exist regarding any demographic divisions within this population. Fidelity to habitat sites is strong within some other beluga populations (e.g. St. Lawrence), and less so with other populations such as the Eastern Beaufort Sea stock. Rugh, Shelden, and Hobbs (2010) found Cook Inlet beluga distribution to have changed over the last decades, and suggest this may be due to their reduced numbers that allows the whales to select only the most productive habitat areas. This apparent redistribution indicates this characteristic is at least somewhat flexible for the Cook Inlet belugas, and that any reduction in the use of upper Knik Arm by beluga whales might be offset by their

adaptive use of other habitat areas in the Inlet. This adaptive behavior also appears probable in view of the fact that only a portion of the Cook Inlet DPS occurs in Knik Arm at any one time, while the remainder of the whales occupy other (and presumably similar) habitats elsewhere. We would not expect all beluga whales to fail to pass through the crossing alignment (during construction or operation). Because of this, and the presently lower population size, the productivity and habitat value of alternative sites should be capable of providing for the nutritional and other requirements of the small numbers of whales that may experience any reduced use of upper Knik Arm habitat. While these alternate habitat sites may be fully-utilized by a recovered Cook Inlet beluga population, this would not occur for decades; long past the construction period for the KAC.

Any reduction in the availability of, or access to, foraging habitat could have consequence to individual fitness. Williams et al. (2006) considered the impact of exposure to vessels (these were mostly fishing vessels rather than whale-watching vessels) by northern resident killer whales in British Columbia. They found these whales reduced the time spent feeding from 13 per cent to 10 per cent when boats were present, but concluded the net energetic effect of this was small; increasing by 3 per cent in the presence of vessels. However, they estimated the lost opportunity to feed resulted in a 28 per cent decrease in 12 hour energetic gain. This study found that, while northern resident killer whales may be able to balance the energetic costs of avoiding boats, such short-term behavioral responses can carry energetic costs that could have long-term population effects if the population were food-limited. At this time, NMFS is not aware of evidence to support the theory that the Cook Inlet beluga whale population is so-limited.

We would expect any diminished use of Knik Arm by beluga whales to recover after construction. Morton and Symonds (2002) describe the effects of acoustic harassment devices on killer whales in Johnstone Strait near Vancouver Island. Operation of those devices, designed to deter harbor seals, coincided with a marked decrease in the numbers of killer whales in the area. The harassment devices operated at 10kHz, a frequency that would be particularly sensitive to mid-frequency cetaceans such as killer whales and beluga whales. However, when the use of the devices ended, killer whale occurrence re-established to baseline levels.

Any possible reductions in passage through the alignment would be mitigated in part through construction timing to avoid periods of high beluga use. Also, because behavioral reactions by beluga whales are highly dependent on context; that beluga (and other) whales are often more tolerant of disturbance when feeding; that beluga presence in Knik Arm is associated with anadromous fish runs and much of their behavior here is assumed to be related to foraging; and because beluga whales have demonstrated tolerance to noise sources (Richardson 1995); we believe there is reasonable certainty that passage through the alignment will not be impaired to the point of biological significance. We note here, however, that other habitat functions of Knik Arm may exist but are presently unknown or poorly described. Functions such as breeding or calving may be particularly sensitive to noise and harassment, and elicit more pronounced reactions by these whales. If this were to occur, it is possible some reduced access to

such habitat sites may have biological consequence, possibly at population levels. Field observations (Funk et al. 2005) have noted higher percentages of calves within beluga groups in Knik Arm than in the Susitna River area. TEK has also identified upper Knik Arm as a traditional nursery site. However, calves and juvenile whales have been observed throughout sites in upper Cook Inlet, and the Funk et al. 2005 paper was not able to determine whether Knik Arm was representative of beluga whale use at other sites in the Inlet or if the area was selectively used by certain age or sex classes. Also, the fact that juveniles and calves are often observed in Knik Arm indicates the present gauntlet of noise in lower Knik Arm is not preventing them from accessing and utilizing habitats to the north.

NMFS' review of distributional data within Knik Arm found some increased use during May, possibly associated with the spring eulachon runs. To provide further insurance against construction impacts to whales, we propose a Conservation Recommendation to modify pile driving operations in May by halting work within 2 hours either side of low tide; a period when whales would be expected to be found closer to the crossing site.

Integration

We have considered the *project effects* to Cook Inlet beluga whales and their proposed critical habitat. We believe the construction of the KAC will result in the harassment of beluga whales. The majority of such harassment would be due to noise associated with pile driving and vessel operations. The most likely manifestations of this harassment would be a temporary change in the behavior of beluga whales, avoiding the sound source by navigating around it or passing through the ensonified area with fewer surfacing intervals. The most often observed beluga whale behaviors in the area of the crossing alignment have been travelling and diving, while known or suspected feeding was often seen as a secondary or third-level activity. Feeding behavior was found to be the primary activity by beluga whales within Eagle Bay, but this area is more than 4.5 miles from the crossing. Whales here are not expected to be significantly impacted by noise from the project because of the attenuation of in-water noise at this distance and the timing restrictions for impact and vibratory pile driving to occur outside the August through November period when most whales are present.

Studies have estimated one hundred or more beluga whales may occur in Knik Arm; or approximately thirty percent of the total population. Markowitz et al. 2005, in shore-based observations in 2004, found ninety percent of the annual sightings of beluga whales in Knik Arm occurred between August 1 and November 30. This is consistent with other observations and tagging data from NMFS and observations made at the POA (ICRC 2010). A small percentage of these whales may be reluctant to continue to occupy or pass through the construction site. Those whales would likely move into alternative sites with similar habitat properties. Any such effects would be significantly mitigated by the construction schedule that restricts all impact and vibratory pile driving to the period December 1 to July 31.

Impacts to beluga whales from operation of the KAC are unlikely to have significant adverse consequence to individuals or to the population.

The *baseline condition* experienced by the Cook Inlet DPS of beluga whales is characterized by its very low abundance, no observed recovery within the population (NMFS currently estimates a negative 1.1% growth rate), and a high (26%) probability of extinction within the next 100 years. The additional mortality of a single animal would accelerate this extinction timeframe. At the same time, this population faces continuing but unquantified threats from both anthropogenic and natural sources. Although NMFS believes past excessive harvest removals are largely responsible for the decline of this DPS, we are not able to identify the present cause(s) for their lack of recovery. While shoreline construction within lower Knik Arm has been extensive, and an important aspect of the baseline condition, we have no evidence such work has had any significant detrimental impact to individual whales, nor to this population.

Cook Inlet beluga whales are currently being legally harassed due to authorized construction at the Port of Anchorage and by certain scientific research. These takes have been determined not to be significant to the recovery of this DPS. Illegal harassment is likely occurring as a result of small vessels operations, aircraft overflights, and other actions by humans. We are unaware of any on-going lethal or injurious takes, although unobserved, unreported, and illegal harvests are possible. Therefore, a cautious and conservative approach to threats is appropriate and necessary in view of the baseline condition.

Our review of the *cumulative impacts* to Cook Inlet beluga whales also found some unquantified level of threats from activities without a federal nexus, and for which no consultation would occur under the ESA. Of these, we believe recreational vessel traffic may be of most concern, with the potential to harass beluga whales, displace them from important feeding habitat near the mouths of certain salmon streams entering the upper Inlet, and to injure whales due to strikes. However, it appears beluga whales continue to occupy feeding areas despite small boat traffic (indeed, beluga whales remained within feeding habitat of the Susitna Delta despite being actively pursued and hunted during past subsistence harvests). Ship strikes have not been identified as the cause of death for any stranded whales, although many stranding investigations are inconclusive.

On integrating the effects of the proposed KAC on beluga whales and their proposed critical habitat with the environmental baseline and cumulative effects, individual or groups of whales are likely to be harassed by construction noise, but we do not believe this project would have significant adverse consequences at the population/DPS level. Beluga whales are unlikely to be killed or injured by this project, and harassment would be expected to be localized and temporary. Whales will experience higher than ambient noise levels when approaching the crossing, but such noise would degrade to background levels within relatively short distances. The most pronounced increase in noise levels would occur during driving and removal of temporary piling. However, the proposed construction plans restrict these activities to the period of lowest occurrence by beluga whales in Knik Arm. While beluga whales have been and continue to be taken under the environmental baseline and through cumulative effects, we believe such takes are non-lethal and occur mostly due to harassment and disturbance by noise. It is not presently

possible to quantify the effects of this harassment on the extinction risk probabilities for this DPS. However, it is unlikely that non-injurious takes, such as unintentional harassment due to noise, nor the expected effects of the KAC on proposed critical habitat, would elicit consequences to the survival or reproductive capacity of the Cook Inlet beluga whales.

Conservation measures are included in this opinion which, along with operational conditions and mitigative measures in the proposed plans, would further reduce the likelihood for biologically significant impacts to individual whales or this DPS.

Mitigative Measures

In the BA, KABATA and FHA have identified the following mitigative measures, which are adopted here as part of the proposed action. We believe these measures will lessen the effects of the KAC on Cook Inlet beluga whales. Further, such measures may be associated with conditions necessary for authorization of this work under section 101(a)(5) of the Marine Mammal Protection Act. We note that some of the measures proposed by KABATA and FHA are not specific or do not include detailed descriptions. NMFS will coordinate on these matters as the project planning process continues to ensure the objectives will be implemented and effective.

- using drilled-shaft technology for the large-diameter, permanent bridge piers as opposed to driven piles originally proposed in the KAC EIS, significantly reducing in-water noise exposure
- increasing bridge span lengths from the 250-foot spans discussed in the KAC FEIS to 275-foot spans, reducing the number of bridge piers from 33 to 29
- scheduling temporary pile-construction activities when beluga whales are not in Knik Arm or the KAC project area in large numbers (specifically, between December 1 and July 31)
- implementing a soft-start application for initial pile-driving operations
- avoiding simultaneous installation and/or removal for moorage, dock, and template piles in different locations (*Exception:* Whenever beluga whales are not present in the project area and weather conditions are favorable, KABATA will however, coordinate with NMFS to determine whether pile driving at multiple locations would be acceptable to minimize the project's in-water duration of disturbance.)
- monitoring construction-related acoustics to determine appropriate safety zones around pile-driving activities
- implementing a multiple-observer monitoring program with mandatory shut-down procedures to avoid injury and minimize potential harassment to beluga whales
- implementing a construction contractor specification to maximize vessel-free beluga passage zones during construction
- implementing NMFS vessel operation guidelines to minimize construction vessel operation impacts
- implementing measures to protect water quality and flows in receiving waters

- focusing mitigation for fill impacts required for roadway approach construction to maximize fishery enhancements in Knik Arm
- preventing the construction of a boat launch ramp facility in association with the project so that no direct access to tidelands is provided
- developing an Adaptive Management Plan in close coordination with NMFS

VII. CONCLUSION

After reviewing the current status of the Cook Inlet beluga whale, the environmental baseline, the effects of the proposed action, and the cumulative effects, it is the opinion of NMFS that the implementation of the proposed action, as described in this opinion, is not likely to jeopardize the continued existence of the Cook Inlet beluga whale nor to destroy or adversely modify its proposed critical habitat.

VIII. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. KABATA should revise their crossing design to decrease the length of the eastern abutment fill by approximately 800 feet, or to Station 810+00 as depicted in the November 2009 Proof of Concept Geological Section. This action would reduce the loss of critical habitat and present fewer long-term impacts to beluga whales which utilize the near shore areas of Knik Arm along this shoreline.
2. KABATA or DOT should develop and implement a noise-reduction protocol for vessels. This plan should consider operational and engineering opportunities to reduce noise and may include such measures as using gaskets to isolate noise sources (e.g. engines, generators, winches), using moorings rather than propellers to maintain position, using non-powered barges and platforms in lieu of powered vessels, vessel speed limitations, access points, and travel corridors.
3. KABATA or DOT should halt impact and vibratory pile driving during the month of May within two (2) hours either side of low tide to reduce the exposure of beluga whales to this noise source during the spring eulachon migration.
4. KABATA or DOT should develop a vessel operator beluga whale awareness briefing and operational practices to reduce the effects of construction vessels on these whales. KABATA and/or DOT should consult with NMFS to develop this program and information.

In order for the NMFS, Alaska Region to be kept informed of actions minimizing or avoiding adverse effects or benefiting the endangered Cook Inlet beluga whales, we request notification of the implementation of any conservation recommendations.

IX. REINITIATION of CONSULTATION

This concludes formal consultation on this action. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent incidental take is exceeded; 2) new information reveals effects of this action that may affect listed species or critical habitat in a manner or to an extent not previously considered in this opinion; 3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the identified action.

X. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

This opinion does not include an incidental take statement at this time. Upon issuance of regulations or authorizations under Section 101(a)(5) of the Marine Mammal Protection Act and/or its 1994 Amendments, NMFS will amend this opinion to include an incidental take statement(s) for the described work.

XI. LITERATURE CITED

- Abookire, A. A., and J. F. Piatt. 2005. Oceanographic conditions structure forage fishes into lipid-rich and lipid-poor communities in lower Cook Inlet, Alaska, USA. *Mar. Ecol. Prog. Ser.* 287:229-240.
- Alaska Department of Environmental Conservation (ADEC). 2009. Contaminated Sites Database. Website: <http://www.dec.state.ak.us/spar/csp/>.
- American Petroleum Institute. 1986. Underwater drilling – measurement of sound levels and their effect on belukha whales. Prepared by Polar Research Laboratory, Inc. and Hubbs Marine Research Institute.
- Angliss, R.P., D.P. DeMaster, and A.L. Lopez. 2001. Alaska marine mammal stock assessments, 2001. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-AFSC-124, 203 p.
- Au, W.W.L. 1993. *The Sonar of Dolphins*. Springer Verlag, New York, pp. 277.
- Au, W. W. L., D. A. Carder, P. R.H., and B. L. Scronce. 1985. Demonstration of

- adaptation in beluga whale (*Delphinapterus leucas*) echolocation signals. *Journal of the Acoustical Society of America* 77:726-730.
- Awbrey, F. T., & Stewart, B. S. (1983). Behavioral responses of wild beluga whales (*Delphinapterus leucas*) to noise from oil drilling. *Journal of the Acoustical Society of America*, 74, S54.
- Bain, D.E., R. Williams, J.C.Smith, and D. Lusseyau. 2006. Effects of vessels on behavior of Southern Resident killer whales (*Orcinus* spp.) 2003-2005. NMFS Contract AB133F05SE3965.
- Batten, S.D. and D.L. Mackas. 2007. A continuous plankton recorder survey of the North Pacific and southern Bering Sea. North Pacific Research Board Final Report 601. 21 pp.
- Becker, P.R., M.M. Krahn, E.A. Mackey, R. Demiralp, M.M. Schantz, M.S. Epstein, M.K. Donais, B.J. Porter, D.C.G. Muir, and S.A. Wise. 2000. Concentrations of Polychlorinated Biphenyls (PCBs), Chlorinated Pesticides, and Heavy Metals and Other Elements in Tissues of Belugas, *Delphinapterus leucas*, from Cook Inlet, Alaska. *Marine Fisheries Review* 62(3):81-98.
- Blackwell, S.B., C.R. Greene 2002. Acoustic Measurements in Cook Inlet, Alaska. During August 2001. Prepared for National Marine Fisheries Service Under Contract Number 40HANF100123. Greeneridge Report 271-1. 41 p.
- Blackwell, S.B 2005. Underwater Measurements of Pile-driving Sounds During the Port MacKenzie Dock Modifications. August 13 through 16, 2004. Report from Greeneridge Sciences, Inc., Goleta, California and LGL Alaska Research Associates, Inc., Anchorage, Alaska. In association with HDR Alaska, Inc., Anchorage, Alaska; for Knik Arm Bridge and Toll Authority, Anchorage, Alaska; Department of Transportation and Public Facilities, Anchorage, Alaska; and Federal Highway Administration, Juneau, Alaska. 33 p.
- Burek, Kathy – DVM. 1999. Biopsy Report of Beluga Whale: Case No. 99V0269. National Marine Fisheries Service, Anchorage, Alaska.
- Braham, H.W. 1984. Review of reproduction in the white whale, *delphinapterus leucas*, narwhal, *Monodon monoceros*, and irrawaddy dolphin, *Orcaella brevirostris*, with comments on stockassessment. *Rep. Int. Whal. Spec. Issue* 6:81-89.
- Burek, Kathy – DVM 1999. Biopsy Report of Beluga Whale: Case No. 99V0269. NMFS, Anchorage, Alaska. 2 p.
- Burns, J.J., and G.A. Seaman. 1986. Investigations of belukha whales in coastal waters of western and northern Alaska. II. Biology and ecology. U.S. Dept. Commer., NOAA, OCSEAP Final Rep. 56(1988): 221-357.

- Calkins, D.G. 1983. Susitna hydroelectric project phase II annual report: big game studies. Vol. IX, belukha whale. ADFG, Anchorage, Alaska. 15p.
- Calkins, D.G. 1984. Susitna hydroelectric project final report: volume IX, beluga whale. ADFG Document No. 2328. 17p.
- Calkins, D.G. 1989. Status of Beluga Whales in Cook Inlet. In: Gulf of Alaska, Cook Inlet, and North Aleutian Basin Information Update Meeting. L.E. Jarvela and L.K. Thorsteinson (Eds). Anchorage, Alaska, February 7-8, 1989. Anchorage, Alaska.: USDOC, NOAA, OCSEAP, p. 109-112.
- Carlson, T.J. 1994. Use of Sound for Fish Protection at Power Production Facilities: A Historical Perspective of the State of the Art. Phase I Final Report: Evaluation of the Use of Sound to Modify the Behavior of Fish. Report No. DOE/BP-62611-4. Prepared for U.S. Department of Energy; Bonneville Power Administration; Environment, Fish, and Wildlife. November.
- Caron, L.M.J. and D.E. Sergeant. 1988. Yearly variation in the frequency of passage of beluga whales at the mouth of the Saguenay River, Quebec, over the past decade. *Naturaliste Canada* 115: 111-116.
- CH2M HILL. 1997. Operable Unit C: Final Remedial Investigation Report, Fort Richardson Alaska. Prepared for U.S. Army Alaska by CH2M HILL Anchorage, Alaska.
- Chamberlin, D.W. 1991. Effects of nonexplosive seismic energy releases on fish. *Am. Fish. Soc. Symposium* 11:22-25, 1991.
- Cohen, D. M., T. Inada, T. Iwamoto, and N. Scialabba. 1990. FAO species catalogue. Vol. 10. Gadiform fishes of the world (Order Gadiformes). An annotated and illustrated catalogue of cods, hakes, grenadiers and other gadiform fishes known to date. *FAO Fisheries Synopsis* 10 (125):1-442.
- Cornick, L.A. and L.S. Kendall 2008. Distribution, Habitat Use, and Behavior of Cook Inlet Beluga Whales in Knik Arm, Fall 2007. Final Annual Report for 2007 from Alaska Pacific University. Prepared for Integrated Concepts & Research Corporation, Anchorage, Alaska.
- Cornick, L.A. and L. Saxon-Kendall 2009. End of Construction Season 2008 Marine Mammal Monitoring Report: Construction and Scientific Marine Mammal Monitoring Associated with the Port of Anchorage Marine Terminal Redevelopment Project. Final Annual Report for 2008 from Alaska Pacific University. Prepared for Integrated Concepts & Research Corporation, Anchorage, Alaska.
- Cornick, L.A. and L. Saxon-Kendall 2010. Distribution , Habitat use and Behavior of Cook Inlet Beluga Whales and other Marine Mammals at the Port of Anchorage Marine Terminal Redevelopment Project. Annual Scientific Marine Mammal

Monitoring Report for 2009: Alaska Pacific University. Prepared for Integrated Concepts & Research Corporation, Anchorage, Alaska. December.

- Cox, T.M, Read, A.J., Solow, A. & Tregenza, N. 2001. Will harbour porpoises (*Phocoena phocoena*) habituate to pingers? *Journal of Cetacean Research and Management*: 81-86.
- DFO. 2004. Review of scientific information on impacts of seismic sound on fish, invertebrates, marine turtles and marine mammals. Dept. Fisheries and Oceans Canada. Habitat Status Rep. 2004/002.
- DeMaster, D. P. 1995. Minutes from the third meeting of the Alaska Scientific Review Group, 16-17 February 1995, Anchorage, Alaska. 21 pp. + appendices. (available upon request - D. P. DeMaster, National Marine Mammal Laboratory, 7600 Sand Point Way, NE, Seattle, WA 98115).
- Erbe, Christine. 2000. Underwater noise of whale watching boats and its effects on marine mammals. Institute of Ocean Sciences. Sidney, B.C., Canada.
- Erbe, Christine. And D.M. Farmer. 1998. Masked hearing thresholds of a beluga whales (*Delphiapterus leucas*) in icebreaker noise. *Deep-Sea Research II* 45: 1373-1388.
- Fernández, A., Arbelo, M., Deaville, R., Patterson, I. A. P., Castro, P., Baker, J. R., et al. (2004). Pathology: Whales, sonar and decompression sickness (reply). [Brief Communications]. *Nature*, 428(6984), U1-2.
- Fernández, A., Edwards, J. F., Rodríguez, F., Espinosa de los Monteros, A., Herráez, P., Castro, P., et al. (2005). Gas and fat embolic syndrome involving a mass stranding of beaked whales (Family Ziphiidae) exposed to anthropogenic sonar signals. *Veterinary Pathology*, 42, 446-457.
- Finneran, J. J., C. E. Schlundt, D. A. Carder, and S. H. Ridgway. 2002. Auditory filter shapes for the bottlenose dolphin (*Tursiops truncatus*) and the white whale (*Delphinapterus leucas*) derived with notched noise. *The Journal of the Acoustical Society of America* 112:7.
- Fried, S. M., J. J. Laner, and S. C. Weston. 1979. Investigation of white whale (*Delphinapterus leucas*) predation upon sockeye salmon (*Oncorhynchus nerka*) smolts in Nushagak Bay and associated rivers: 1979 aerial reconnaissance surveys. Project 11-41-6-340. Alaska Department of Fish and Game, Dillingham, Alaska. 15p.
- Frid, A. and L.Dill. 2002. Human-caused disturbance stimuli as a form of predation risk. *Cons. Ecol.* 6(1): 11.
- Fraker, M.A. 1977. The 1977 white whale monitoring program, MacKenize Estuary,

N.W.T. Prepared for Imperial Oil Ltd., Calgary, Alberta by F.F. Slaney and Co. Ltd., Vancouver, B.C.

- Frost, K.J., L.F. Lowry, and R.R. Nelson. 1983. Investigations of belukha whales in coastal waters of western and northern Alaska, 1982-1983: marking and tracking of whales in Bristol Bay. U.S. Dept. Commer., NOAA, OCSEAP Final Rep. 43(1986):461-585.
- Funk, et al. 2005. (Funk, D.W., R.J. Rodrigues, and M.T. Williams [eds.].) Baseline Studies of Beluga Whale Habitat use in Knik Arm, Upper Cook Inlet, Alaska. Rep. from LGL Alaska Research Associates, Inc., Anchorage, Alaska, for HDR Alaska, Inc., Anchorage, Alaska, and Knik Arm Bridge and Toll Authority, Anchorage, Alaska. 65 p. + appendices.
- Geraci, J.R. 1990. Physiologic and Toxic Effects on Cetaceans. p. 167-192. In: Sea Mammals and Oil: Confronting the Risks J.R. Geraci and D.J. St. Aubin, Editors. First ed., Academic Press, Inc., San Diego, California: 239 p.
- Hastings, M.C. and A.N. Popper. 2005. Effects of sound on fish. Jones and Stokes, for Cal. Dept. Transportation, Contract No. 43A0139. 82p.
- Hazard, K. 1988. Beluga whale, *Delphinapterus leucas*. In: Selected marine mammals of Alaska: species accounts with research and management recommendations. J.W. Lentfer, ed. Mar. Mammal Comm., Washington, D.C.
- HDR Alaska, Inc. 2010. A Review of Beluga Whale Response to In-Water Structures, Volume I DRAFT Knik Arm Bridge and Toll Authority (KABATA). In: Knik Arm Crossing Biological Assessment. Prepared by HDR, Alaska Inc. for the Knik Arm Bridge and Toll Authority, Alaska Dept. of Transportation and Public Facilities, and Federal Highways Administration.
- Herman, L. 1980. Cetacean behavior. New York: John Wiley and Sons.
- Hobbs, R.C., D. J. Rugh, and D. P. DeMaster. 2000. Abundance of belugas, *Delphinapterus leucas*, in Cook Inlet, Alaska, 1994-2000. Mar. Fish. Rev. 62(3):37-45.
- Hobbs, et al. 2005. (Hobbs, R.C., K.L. Laidre, D.J. Vos, B.A. Mahoney, and M. Eagleton.) Movements and Area Use of Belugas, *Delphinapterus leucas*, in a Subarctic Estuary. Arctic 58(4):33 1-340.
- Hobbs, R.C., K.E.W. Sheldon, D.J. Vos, K.T. Goetz, and D.J. Rugh. 2006. Status review and extinction assessment of Cook Inlet belugas (*Delphinapterus leucas*). AFSC Processed Rep. 2006-16, 74 p. Alaska Fisheries Science Center, National Marine Fisheries Service, NOAA, 7600 Sand Point Way NE, Seattle WA 98115.

- Huntington, H.P. 2000. Traditional Knowledge of the Ecology of Belugas, *Delphinapterus leucas*, in Cook Inlet, Alaska. *Marine Fisheries Review* 62: 134-140.
- Integrated Concepts and Research Corporation (ICRC) 2009. End of Construction Season 2008 Marine Mammal Monitoring Report Construction Associated with the Port of Anchorage *Marine Terminal Redevelopment Project*. January.
- Integrated Concepts and Research Corporation (ICRC) 2010 Annual Report for Construction. 2009 Annual Marine Mammal Monitoring Report Construction Associated with the Port of Anchorage Marine Terminal Redevelopment Project. February.
- Integrated Concepts and Research Corporation (ICRC) and URS Corporation, 2009. Biological Assessment for the Beluga Whale *Delphinapterus leucas*. For the Port of Anchorage Expansion Project and Associated Dredging. April. Available on the Port of Anchorage Website: http://www.portofanchorage.org/library_p.html.
- Joling, D. Beluga found far from sea. Anchorage Daily News, June 16, 2006.
- Johnson C. S. 1967. Sound detection thresholds in marine mammals in *Marine Bio-Acoustics* Vol. 2, edited by W. N. Tavolga. Pergamon, New York. pp. 247-260.
- Johnson C. S., M.W. McManus, and D. Skaar. 1989. Masked tonal hearing thresholds in the beluga whale. *J. Acoust. Soc. Am.* 85(6), June 1989.
- Kastak, D. and Shusterman, R. J. 1999. In-air and underwater hearing sensitivity of a northern elephant seals (*Mirounga angustirostris*). *Can. Journal of Zoology*, 77, 1751-1758.
- Katona, S.K., V. Rough, and D.T. Richardson. 1983. A field guide to the whales, porpoises and seals of the Gulf of Maine and eastern Canada. New York: Charles Scribner's Sons.
- Knik Arm Bridge and Toll Authority (KABATAT) and Alaska Dept. of Transportation and Public Facilities. 2007. Knik Arm Crossing final environmental impact statement. Prepared for the Federal Highways Administration, Juneau, AK.
- Laidre, K.L., K.E.W. Sheldon, B.A. Mahoney, and D.J. Rugh. 2000. Beluga whale, *Delphinapterus leucas*, Distribution and Survey Effort in the Gulf of Alaska. *Marine Fisheries Review*, Vol. 62, No. 3.
- Lawson, D.E., L.E. Hunter, S.R. Bigl, B.M. Nadeau, P.B. Weyrick and J.H. Bodette. 1996. Physical System Dynamics, White Phosphorus Fate and Transport, 1994, Eagle River Flats, Fort Richardson, Alaska. CRREL Report 96-9 Prepared for U.S. Army Alaska, Fort Richardson, Alaska.

- Lesage, V., C. Barrette, M. C. S. Kingsley, and B. Sjare. 1999. The Effect of Vessel Noise on the Vocal Behavior of Belugas in the St. Lawrence River Estuary. *Marine Mammal Science* 15:65-84.
- Litzow, M. A., K. M. Bailey, F. G. Prahl, and R. Heintz. 2006. Climate regime shifts and reorganization of fish communities: the essential fatty acid limitation hypothesis. *Mar. Ecol. Prog. Ser.* 315: 1-11.
- Lowry, L. 1994. Beluga Whale. Ak Dept. Fish and Game.
- Mahoney, B.A. and K.E.W. Shelden. 2000. Harvest history of beluga whale, *Delphinapterus leucas*, in Cook Inlet, Alaska. *Marine Fisheries Review*, Vol. 62, No. 3.
- Markowitz, et al. 2005. (Markowitz, T.M., D. W. Funk, D. S. Ireland, R. Rodrigues, and M.R. Link.) Use of Knik Arm by Cook Inlet beluga whales. LGL Research Associates, Inc. in: Funk, D.W., T.M. Markowitz, and R. Rodrigues, (eds). 2005. Baseline studies of beluga whales habitat use in Knik Arm, Upper Cook Inlet, Alaska, July 2004-July 2005. Rep. from LGL Alaska Research Associates, Inc., Anchorage, AK, in association with HDR Alaska, Inc., Anchorage, AK, for the Knik Arm Bridge and Toll Authority, Anchorage, AK, Department of Transportation and Public Facilities, Anchorage, AK, and the Federal Highway Administration, Juneau, AK.
- Markowitz, T.M. and T.L McGuire 2007. Temporal-spatial Distribution, Movements and Behavior of Beluga Whales Near the Port of Anchorage, Alaska. Final Report from LGL Alaska Research Associates, Inc. Prepared for Integrated Concepts & Research Corporation for the U.S. Department of Transportation Maritime Administration and the Port of Anchorage. 93 pp.
- Mate, B.R. and J.T. Harvey (eds). 1987. Acoustical deterrents in marine mammal conflicts with fisheries: a workshop held February 17-18, 1986 at Newport, Oregon. Oregon State University, Corvallis, OR. Publ. No. ORESU-W-86-001. 116 pp.
- McCauley, R.D., J. Fewtrell, and A.N. Popper. 2003. High intensity anthropogenic sound damages fish ears. *J. Acoust. Soc. Am.* 113 (1).
- McGuire, T.L., C.C. Kaplan, M.K. Blees, and M.R. Link. 2008. Photo-identification of beluga whales in Upper Cook Inlet, Alaska. 2007 Annual Report. Report prepared by LGL Alaska Research Associates, Inc., Anchorage, AK, for Chevron and ConocoPhillips Alaska, Inc. 52 p. + Appendices.
- McGuire, T.L. and C.C. Kaplan. 2009. Photo-identification of beluga whales in Upper Cook Inlet, Alaska. Final report of field activities in 2008. Report prepared by LGL Alaska Research Associates, Inc., Anchorage, AK, for National Fish and Wildlife Foundation. 59 p.

- Moore, et al. 2000. (Moore, S.E., K.E.W. Shelden, L.L. Litzky, B.A. Mahoney, and D.J. Rugh.) Beluga, *Delphinapterus leucas*, Habitat Associations in Cook Inlet, Alaska. *Marine Fisheries Review* 62:60-80.
- Morton, A.B. and H.K. Symonds. 2002. Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada. *ICES J. of Mar. Sci.*, 59:71-80.
- Moulton, M.M. 1997. Early Marine Residence, Growth, and Feeding by Juvenile Salmon in Northern Cook Inlet, Alaska. *Alaska Fishery Research Bulletin* 4:154-177.
- Nachtigall, P.E., Pawloski, J. L., and Au, W.W. L. 2003. Temporary threshold shifts and recovery following noise exposure in the Atlantic bottlenose dolphin (*Tursiops truncatus*) measured using auditory evoked potentials. *J. Marine Mammal Science*, 20, 673-687.
- Nachtigall, P.E., Supin, A. Ya., Pawloski, J. L., and Au, W.W. L. 2004. Temporary threshold shifts and recovery following noise exposure in the bottlenose dolphin (*Tursiops truncatus*). *J. Acoust. Soc. America*, 113, 3425-3429.
- National Marine Fisheries Service (NMFS) 2008. Final Conservation Plan for the Cook Inlet Beluga Whale (*Delphinapterus leucas*). National Marine Fisheries Service, Juneau, Alaska.
- National Marine Fisheries Service. 2009. Biological Opinion for the Marine Terminal Redevelopment Project at the Port of Anchorage, Alaska, and its effects on the endangered Cook Inlet beluga whale. Available on the Port of Anchorage Website: http://www.portofanchorage.org/library_p.html.
- Norris, K.S. 1994. Beluga: White Whales of the North. *National Geographic*. 185(6): 2-31.
- Nowak, R.M. 2003. Walker's Marine Mammals of the World. Johns Hopkins University Press, Baltimore, Maryland.
- Payne, S.A., B.A. Johnson, and R.S. Otto. 1999. Proximate composition of some north-eastern Pacific forage fish species. *Fish Oceanogr.* 8:3, 159-177.
- Perrin, W.F. 1999. Selected Examples of Small Cetaceans at Risk. In *Conservation and Management of Marine Mammals*. J.R. Twiss and R.R. Reeves eds. Smithsonian, Washington, DC. Pp. 297-310.

- Port of Anchorage (POA). 2003a. Environmental Baseline Survey for the Port of Anchorage Road and Rail Extension Right of Way, U.S. Army Defense Fuels Property. September 23.
- Port of Anchorage (POA). 2003b. Environmental Baseline Survey for the Port of Anchorage Road and Rail Extension Right of Way, U.S. Air Force Property. September 23.
- Port of Anchorage (POA). 2004. Final Port of Anchorage Road and Rail Extension Environmental Assessment. Intermodal Expansion Project. January.
- Port of Anchorage (POA). 2009. Port of Anchorage Intermodal Expansion Project Website: <http://www.portofanchorage.org/>. Accessed June 2, 2009.
- Piatt, J.F., G.Drew, T.VanPelt, A. Abookire, A.Nielsen, M. Shultz, and A. Kitaysky. 1999. Biological Effects of the 1997/98 ENSO in Cook Inlet, Alaska.
- Prevel, Ramos, et al. 2006. (Prevel Ramos, A.P., T.M. Markowitz, D.W. Funk, and M.R. Link.). Monitoring Beluga Whales at the Port of Anchorage: Pre-expansion Observations, August-November 2005. Report from LGL Alaska Research Associates, Inc., Anchorage, Alaska, for Integrated Concepts & Research Corporation, the Port of Anchorage, Alaska, and the waterfront Department of Transportation Maritime Administration.
- R&M Consultants. 2007. Port of Anchorage Storm Water Management Program. Storm Water Pollution Prevention Plan and 2009 System Wide Report. March.
- R&M Consultants. 2010. Port of Anchorage Storm Water Management Program. Storm Water Pollution Prevention Plan and 2009 System Wide Report. Rev 15. March.
- Reeves, R.R., B.S. Stewart, P.J. Clapham, J.A. Powell. 2002. National Audubon Society Guide to Marine Mammals of the World. A.A. Knopf, Random House, New York.
- Reynolds, J. 2010. Presentation at NMFS workshop on Cook Inlet beluga whale research, October 11-12, 2010, Anchorage, Alaska. John Reynolds, Mote Marine Laboratory.
- Richards, S.D. 1998. The effect of Temperature, Pressure, and Salinity on Sound Attenuation in Turbid Seawater. J. Acoust. Soc. Am., Vol 103, No. 1.
- Richardson, W.J. 1995. Marine Mammal Hearing. In: Marine Mammals and Noise. W.J. Richardson, C.R. Greene, Jr., C.I. Malme, and D.H. Thomson, eds. Academic Press. 576p.

- Ridgway, S. and Sir R. Harrison. 1981. Eds., Handbook of marine mammals. Vol. 4. Academic Press. London.
- Rugh, et al. 2004. (Rugh, D.J., B.A. Mahoney, and B.K. Smith.) Aerial Surveys of Beluga Whales in Cook Inlet, Alaska, Between June 2001 and June 2002. U.S. Department of Commerce. NOAA Technical Memorandum NMFS-AFSC-145.
- Rugh, et al. 2005. (Rugh, D.J., K.E.W. Shelden, C.L. Sims, B.A. Mahoney, B.K. Smith, L.K. (Litzky) Hoberecht, and R.C. Hobbs.) Aerial Surveys of Belugas in Cook Inlet, Alaska, June 2001, 2002, 2003, and 2004. NOAA Technical Memorandum NMFS-AFSC-149. 71pp.
- Rugh, D.J., K.T. Goetz, J.A. Mocklin, B.A. Mahoney, and B.K. Smith. 2007. Aerial survey of belugas in Cook Inlet, Alaska, June 2007. Unpubl. NMFS report. 16 pp.
- Rugh, D.J., K.E.W. Shelden, and R.C. Hobbs. 2010. Range contraction in a beluga whale population. *Endang. Species Res.* Vol. 12: 69-75.
- Scheifele, P.M. 1987. Hearing and acoustical behavior data from captive Beluga Whales at Mystic Marinelife Aquarium. Unpublished. Aquarium report.
- Schlundt, C.E., Finneran, J.J., Carder, D.A., and Ridgway, S.H. 2000. Temporary threshold shifts in masked hearing thresholds (MTTS) of bottlenose dolphins and white whales after exposure to intense tones. *Journal of the Acoustical Society of America*, 107, 3496-3508.
- Scientific Fishery Systems, Inc. 2009. 2008 Underwater Noise Survey During Construction Pile Driving, Port of Anchorage Marine Terminal Development Project, in Support of Alaska Native Technologies, LLC. Prepared for U.S. Department of Transportation Maritime Administration, Port of Anchorage, and Integrated Concepts & Research Corporation. January.
- Shelden, K.E.W., D.J. Rugh, B.A. Mahoney, and M.E. Dahlheim. 2003. Killer whale predation on beluga whale in Cook Inlet, Alaska: Implications for a depleted population. *Marine Mammal Science*: 19(3):529-544.
- Sirovic, Dr. Ana and Lindsey Saxon-Kendall 2009, Passive Acoustic Monitoring of Cook Inlet Beluga Whales Analysis Report, Port of Anchorage Marine Terminal Redevelopment Project. Alask Pacific University. Prepared for U.S. Department of Transportation Maritime Administration, Port of Anchorage and Integrated Concepts and Research Corporation. December.
- Southall, B.L., A.E. Bowles, W.T. Ellison, J.J. Finneran, R.L. Gentry, C.R. Greene Jr., D. Kastak, D.R. Ketten, J.H. Miller, P.E. Nachtigall, W.J. Richardson, J.A. Thomas, and P.L. Tyack. 2007. Marine mammal noise exposure criteria: initial scientific recommendations. *Aquatic Mammals* 33(4): 411-521.

- Thomas, J.A., R.A. Kastelein, and F.T. Awbrey. 1990. Behavior and blood catecholamines of captive beluga whales during playbacks of noise from an oil drilling platform. *Zoo Biology*, 9, 393-402.
- URS Corporation (URS). 2007. Port of Anchorage Marine Terminal Development Project Underwater Noise Survey Test Pile Driving Program, Anchorage, Alaska. Report prepared for Integrated Concepts & Research Corporation, Anchorage, Alaska.
- URS Corporation (URS), 2009. Acoustic Monitoring 2009 Construction Activities Associated with the Port of Anchorage Marine Terminal Redevelopment Project. Prepared for U.S. Department of Transportation Maritime Administration, the Port of Anchorage, and Integrated Concepts & Research Corporation. October.
- URS Corporation (URS), 2010. Chemical exposures for Cook Inlet beluga whales, a literature review and evaluation. Prepared by URS Corp. for National Marine Fisheries Service, Anchorage, AK.
- U.S. Army. 1984. Database Assessment of the Health and Environmental Effects of Munition Production Waste Products. Frederick, MD: U.S. Army Medical Research and Development Command, Fort Detrick. Document no. AD-A145 417.
- U.S. Army Corps of Engineers (USACE). 2005. Draft chemical data report - Anchorage Harbor ROST study. Alaska District, Corps of Engineers, Anchorage, Alaska.
- U.S. Army Corps of Engineers (USACE). 2008. Environmental Assessment and Finding of No Significant Impact: Anchorage Harbor Dredging and Disposal, Anchorage, Alaska. August.
- United States Department of Transportation, 2009. Marine Mammal Monitoring Final Report. Construction and scientific marine mammal monitoring associated with the Port of Anchorage marine terminal redevelopment project. 29p.
- Vos, D.J. and K.E.W. Sheldon. 2005. Unusual mortality in the depleted Cook Inlet beluga population. *Northwest. Nat.* 86(2):59-65.
- Wartzok, D., Popper, A. N., Gordon, J., and Merrill, J. 2004. Factors Affecting the Responses of Marine Mammals to Acoustic Disturbance. *Marine Technology Society Journal*, 37, 6-15.
- Weingartner, T. 2007. Long-term oceanographic monitoring of the Gulf of Alaska ecosystem. Exxon Valdez Oil Spill Trustee Council Annual Project Report, Project 070340. 2pp.

- White, M.J., J. Norris, D. Ljungblad, K. Baron, and G. Di Sciara. 1978. Auditory thresholds of two beluga whales (*Delphinapterus leucas*). Hubbs/Sea World Research Institute and Naval Ocean Systems Center, San Diego, California. Technical Report H/SWRI 78-109.
- Williams, R.D. and P.S. Hammond. 2006. Estimating relative energetic costs of human disturbance to killer whales (*Orcinus orca*). *Biol. Conserv.* 133:301-311.
- Wright, A.J., Aguilar Soto, N., Baldwin, A.L., Bateson, M., Beale, C.M., Clark, C., et al. (2007). Anthropogenic noise and physiological stress: behavior, context and animal welfare. *Int. Journal of Comparative Psychology*.